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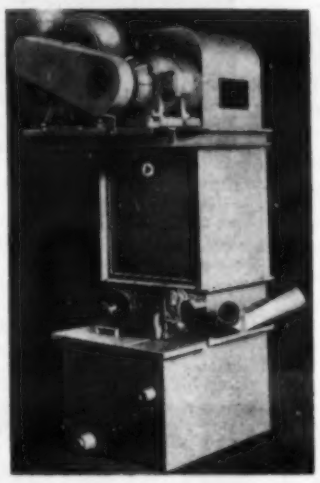
NEW EQUIPMENT DIGEST

EQUIPMENT • IMPROVEMENTS • PROCESSES • MATERIALS • METHODS • APPLICATIONS • LITERATURE

Vol. 8 August, 1943 No. 8

SMALL DUST COLLECTOR



Added to regular line of orifice type dust collectors, this small size unit has capacity of 1200 cubic feet of air per minute. It is designed especially for use with double spindle grinding and buffing lathes, but is adaptable to other types of operations.

It is particularly effective in handling magnesium dusts, according to manufacturer. Cleaning action is effected by directed movement of air through orifice. Compartment on side collects sludge and permits easy removal. Water level is controlled by diaphragm valve. Made by **Peters-Dalton, Inc.**, 632 E. Forest Ave., Detroit 1, Mich.

▲ Mention Item NED-3925 when writing ▲

MULTIPLE LATHE STOP

Production from standard lathes may be stepped up through use of this ADT - Victor Multi-Stop device. When used with toolpost turret to position carriage of engine lathe, this accessory provides five positions. Adjustable hardened steel stops permit setup on many jobs which is claimed to be improvement over standard turret lathe setup for same operations. Device is available for all V-bed lathes as well as Atlas-Craftsman lathes. Multi-stop units are also available for applications to lathe cross-slides. Made by **Marshall Tool & Supply Co.**, 1224 Santa Fe Ave., Los Angeles, Calif.

▲ Mention Item NED-3926 when writing ▲

Do You Know

■ SEVERAL new phenolic molding plastics which help conserve the supply of phenol have been developed. These materials may be used where it is not necessary to meet exacting government specifications. Types are available as substitutes for general-purpose phenolics, for bottle caps and closures, and for high impact-resistant applications. Made by Bakelite Corp., Dept. E, 30 E. Forty-second St., New York, N. Y.

▲ Mention Item NED-3927 when writing ▲

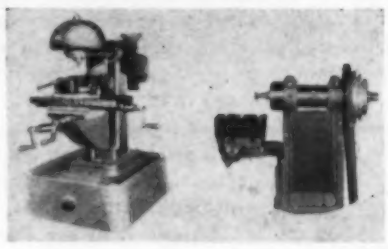
Photographs with an exposure of one-millionth of a second, brief enough to stop a rifle bullet, can be made with new high speed electronic lighting equipment. Device uses small mercury lamp and small portable box. It can be operated manually by push button or automatically by electrical contacts or phototube and preamplifier. It will illuminate 20 square feet of area with sufficient intensity to photograph fastest moving objects. Made by General Electric Co., Schenectady, N. Y.

▲ Mention Item NED-3928 when writing ▲

Series of six educational 16-millimeter sound motion pictures on "Use and Care of Hand Tools" is available at cost for instruction of trainees and mechanics in industrial and vocational schools. Correct methods of using tools for safer and faster work are shown. Films cover wrenches, pliers and screwdrivers, chisels, hammers, wrenches, punches and drifts, and hacksaws. Full details available from Plomb Tool Co., Dept. D, 2209 Santa Fe Ave., Los Angeles, Calif.

▲ Mention Item NED-3929 when writing ▲

BENCH MILLING MACHINE



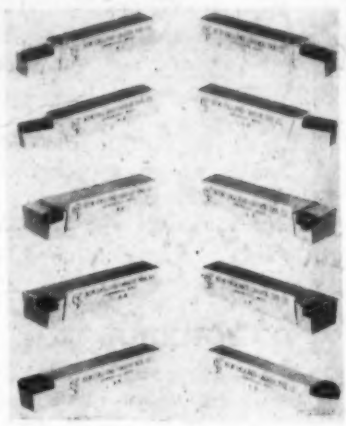
Of improved design, this vertical bench milling machine has quick-change attachment for horizontal milling operations. Spindle head is supported by 2½-inch diameter arm which clamps rigidly to column and can be readily adjusted to rotate spindle 60 degrees either side of center. Entire head is easily removable for replacement by enclosed horizontal milling attachment. This adapts machine to variety of jobs such as die sinking, die making, profiling, jig boring and key slotting without need for tying up larger machine.

Precision ground table measures 6 x 14 inches and has three ⅜-inch T-slots on 2-inch centers. Micrometer adjustments for table movements are operated by convenient splined, disengageable hand cranks. Graduated dials reading in thousandths of inch make resetting simple process. Enclosed spindle guard offers safety and improved appearance.

Proper tension of V-belt is assured by floating motor mount. Rapid changes of spindle speed to 450, 850, 1400 and 2100 revolutions per minute are effected readily. Spindle has No. 2 Morse taper. Power is furnished by 1/3 horsepower motor. Made by **Benchmaster Tool Co.**, 2952 W. Pico, Los Angeles, Calif.

▲ Mention Item NED-3930 when writing ▲

CARBIDE TIPPED TOOLS



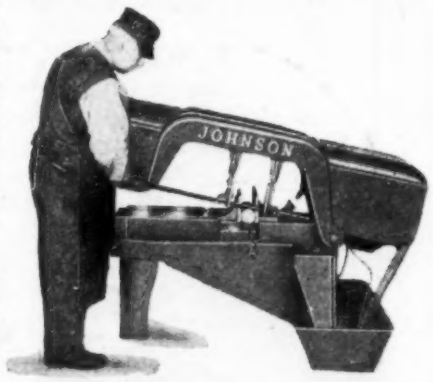
This line of standard tungsten carbide tipped tools includes four styles in both right and left hand, as well as pointed and square tools. They are furnished in "U" grade for cutting all materials except steel, such as aluminum, cast iron, brass, bronze, non-metallics and alloys, and in "S" grade for cutting steel. Both standard and special tools can be furnished with any make or grade of carbide specified by customer.

Other products recently announced include carbide tipped flat and circular form tools, reamers, boring tools, counterbores, centers and special tools; tungsten carbide, boron carbide and diamond tipped contact points and anvils; solid carbide burnishing nests and wheels; guide bushings and collets with carbide inserts; shaped and trueing diamonds, and diamond powder from No. 1 coarse to No. 9 fine. Made by **New England Carbide Tool Co.**, 60 Brookline St., Cambridge, Mass.

▲ Mention Item NED-3931 when writing ▲

METAL CUTTING SAW

Adaptable for high speed cutting of metal, this wet cutting model metal cut-off bandsaw is of improved design. Coolant pump is of non-clogging piston type, driven by noiseless cam. Pump is mounted in frame without interfering with overall styling. Power for pump is furnished through regular drive gear, eliminating necessity for separate motor.



Speed of coolant pump is regulated by speed of machine, rate of flow being proportional to blade speed. Pump may be readily disconnected for dry cutting operations. Johnson bandsaws are readily equipped with this coolant feature. Attachment may be installed in less than one hour. Made by **Johnson Mfg. Corp.**, Albion, Mich.

▲ Mention Item NED-3932 when writing ▲

Read Carefully
CHECK AND PASS ON

CHECK	NAME AND TITLE	SEE ITEM NO.

MIDGET LIMIT SWITCH

Though designed for post war use, this Peanut Micro Switch is now being produced in large quantities for all types of industrial applications. No larger than end of man's index finger, this switch is claimed to be more rugged, lighter and more resistant to vibration than larger models.

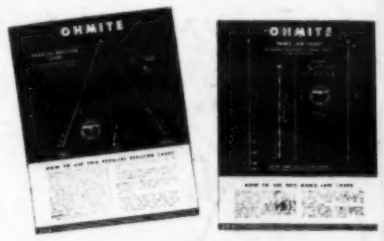
Device is available with or without enclosing case. When used without case, actuating movement can be applied any where over large portion of upper spring. Bakelite case has convenient stem mounting and construction provides sufficient overtravel beyond point of operation for most uses.

Contact gaps ranging up to 0.085 inches can be varied in manufacture. Pure silver contacts are formed with knurled surface to provide high unit contact pressure for low voltage applications. This switch is especially suitable for uses where extremely low operating force and fast action are not of importance. Made by **Micro Switch Corp.**, 205 S. Chicago Ave., Freeport, Ill.

▲ Mention Item NED-3933 when writing ▲

RESISTANCE WALL CHARTS

As aid to teachers, students, technicians and engineers in war plant training and in industry, Ohm's Law Chart and Parallel Resistor Chart are available in 26 x 36-inch wall size ready for hanging.



First is used for graphical determination of wattage, voltage, current and resistance. Second is used for graphical determination of resistance of resistors in parallel. Explanatory examples are given on face of each chart. Both charts are available free to schools, training centers, engineering and plant executives who write for them on official stationery or company letterhead. Issued by **Ohmite Mfg. Co.**, 4821 Fleurnoy St., Chicago 44, Ill.

▲ Mention Item NED-3934 when writing ▲

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with PLASTIC ROCK!

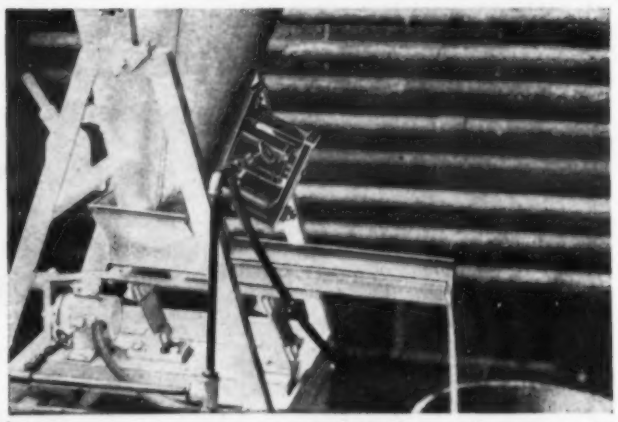
Trowel a smooth, tough, plastic surfacing right over your old concrete or wood floor.

Plastic Rock comes complete, packed in barrels. Nothing more to buy. No application "formula" to confuse you. Simply mix and trowel right over old floor. Average depth one-half inch. Old floor Saturday is a new floor Monday. Also patches concrete to a perfect feather edge. Plastic Rock is absolutely spark-proof, skid-safe wet or dry, dustless, silent. Feels like cork under foot. Cannot splinter, crack, crumble, curl or loosen. Heavy loads in steel wheels actually improve it. Five-year old floors show no wear. Natural color is dark gray. Also furnished in red, green and brown. Used by U. S. Army, Navy and largest industries in America. Your contractor or your own crew can apply.

Ask for your copy of Report 220-8

UNITED LABORATORIES, INC.
16801 EUCLID AVENUE • CLEVELAND, OHIO

▲ Mention Item NED-3935 when writing ▲



Where electricity is not available—or Water or Air more Economical—

SYNTRON

WATER-OPERATED or AIR-OPERATED

VIBRATORS AND FEEDERS

Will do the job!

"Explosion-Proof" Water or Air Powered to suit the application

SYNTRON CO., 405 Lexington, Homer City, Pa.

▲ Mention Item NED-3936 when writing ▲

Now— MAXIMUM PROTECTION against corrosion

DUE TO HIGH TEMPERATURES, GAS FUMES and THE ELEMENTS

Thur-ma-lox* No. 7 Black a high heat resisting paint will maintain in good condition exterior and interior metal surfaces subject to abnormal temperatures from *ice cold* to a *cherry red heat.*

Thur-ma-lox No. 7 remains in an elastic condition expanding and contracting with the heating and cooling of the metal.

Easily applied to either warm or cold surfaces by spray or brush it will provide positive protection against the elements, fumes of sulphur dioxide, carbon dioxide, acetic acid or chlorine.

Write for bulletin N-T describing Thur-ma-lox more in detail and how to apply it.

*Patented

APPLY THUR-MA-LOX TO:

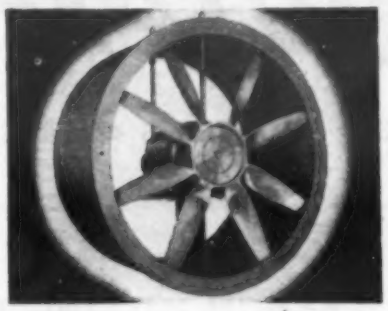
Fire Doors
Flues & Breechings
Steam & Hot Oil Pumps
Lined & Unlined Steel Stacks
Boiler Fronts & Furnace Casings
Water Gas Machines

THE M. W. KELLOGG COMPANY
Exclusive Sales Distributors
225 BROADWAY NEW YORK 7, N. Y.
Representatives in: CHICAGO, ILL. • DETROIT, MICH. • PITTSBURGH, PA.

THURMALOX COMPANY • *Manufacturers* • DOYLESTOWN, PA.

▲ Mention Item NED-3937 when writing ▲

PROPELLER TYPE DUCT FAN



Available in both direct-connected and belt-driven styles, this duct fan is easily installed directly in duct work. Illustrated direct-connected model is designed for use where elements damaging to motor or fire-hazardous materials are not present in air stream.

Propeller type fan is built directly into duct section. Flanged ring at each end of this section allows it to be quickly bolted into place, replacing ordinary duct section. Both models may be lubricated from outside and belt on belt-driven model can be adjusted or replaced from outside.

Fan unit is available in all sizes ranging from 12 to 55-inch ring diameter. It can be supplied with one propeller, two propeller or multiblade fan. Capacities cover wide range. Made by **Hartzell Propeller Fan Co.**, 1514 Roosevelt Rd., Piqua, Ohio.

▲ Mention Item NED-3938 when writing ▲

GAGE INSPECTOR TRAINING

This portfolio of forty 27 by 32-inch illustrated charts on "Dimensional Control — Theory and Industrial Application" is intended for classroom use in training of inspectors. Charts are bound between two heavy covers which act as support easel, facilitating use before class. Also available is 28-page booklet outlining talk to be given when charts are presented.

This portfolio is revised edition of similar set which was distributed to colleges, universities, vocational schools and industry training classes some months ago. Covered by charts are basic definitions, principals of gages, wear allowance, gage-makers tolerances, gaging policy, fixed gages and precision measuring instruments. Several charts have been added on unilateral and bilateral tolerances, gaging policy and new precision measuring instruments.

Because edition is limited, company reserves privilege of accepting orders based on amount of use estimated for each set of charts. This estimate is to be indicated on application form which may be obtained from company. Nominal charge of $3.50 for transportation and handling is made. Issued by **The Sheffield Corp.**, 1530 E. Third St., Dayton, Ohio.

▲ Mention Item NED-3939 when writing ▲

DO YOU KNOW?

Use of pre-doped fabric and new high solvency type of lacquer is said to result in speed up to 20 to 30 per cent in painstaking process of doping airplane and glider surfaces. Products developed by E. I. du Pont de Nemours & Co., Fabrikoid Div., Wilmington, Del.

▲ Mention Item NED-3940 when writing ▲

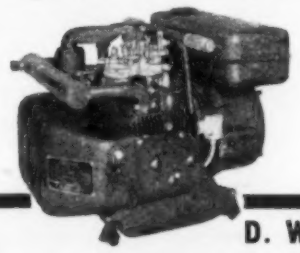
ONAN ELECTRIC PLANTS

Electricity for Any Job --Anywhere

ONAN GASOLINE DRIVEN ELECTRIC PLANTS provide electricity in any location where it is not otherwise available, and for emergency and stand-by service.

Thousands of these reliable, sturdy Plants are doing a winning job on all the fighting fronts by providing power and light for many vital war tasks.

Ratings from 350 to 35,000 watts. A.C. 50 to 800 cycles. 110 to 660 volts. D.C. 6 to 4000 volts. Also dual A.C. and D.C. output models. Air or water-cooled engines.



Details on your present or post-war need for Electric Plants gladly furnished on request.

D. W. ONAN & SONS
1903 ROYALSTON AVE., MINNEAPOLIS, MINN.

▲ Mention Item NED-3941 when writing ▲

ARMOR-PLATE *saves* LIFE AND LIMB

Another "ULI" sensation! Insurance against falls *and* injury—*wherever feet may slip.* Just spray or brush Armor-Plate on dangerous surfaces, and save limbs and lives. Abrasive texture like No. 3/0 emery cloth. For metal floor plates, stair treads, ramps, corridors, airplane wing "steps," ship decks, gangplanks, truck running boards, stepladders—wherever wet, oily or slippery surfaces hamper production and threaten life. Rust-inhibiting. Sticks to wood, metal, concrete, slate, and glass. Cost applied, less than 1c per sq. ft. Jobs three years old show no wear. Choice of gray, red, brown or green.

FREE—Report No. 419-H, applied sample attached

UNITED LABORATORIES, INC.
16801 EUCLID AVENUE • CLEVELAND, OHIO

▲ Mention Item NED-3942 when writing ▲

How to clean a paint brush

DRAFT OLD BRUSHES INTO SERVICE

BEFORE → UNRETOUCHED PHOTO

THE SAME BRUSH AFTER ← UNRETOUCHED

A rock-hard old brush was sawed in half. One half was PRESTORER-cleaned. The two halves were then tied together and photographed as shown.

No Fire Hazard
No Toxic Fumes
Easy to Use

Use PRESTORER PAINT BRUSH REJUVENATOR

Patent Applied For

use PRESTORER

A new non-hazardous brush cleaning solution makes old, hard-as-rock brushes soft, pliable and useful. No fuss, no combing or boiling, no fire-hazard or poisonous fumes. Solution can be used over and over again.

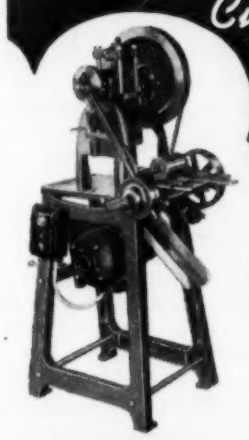
Write for interesting folder

TECHNICAL DEVELOPMENT LABORATORIES
DEPT. 29, P.O. Box 65, TENAFLY, N. J.

▲ Mention Item NED-3943 when writing ▲

DIEBEL Hi-Speed 550 R.P.M. STAMPING PRESS

Cuts Production Time



FROM 800 hours TO 35 hours ON SINGLE WAR-TIME ORDER

Press Pays for Itself on just ONE job!

Stamping production of small aircraft part is boosted from 400 per hour to 12,000 per hour — costs cut from $800 to $30.

[Because of war restrictions, illustration or description of part is prohibited.]

The Diebel Hi-Speed Press is the ideal machine for all small punch work. It saves power, labor, space, money.

WRITE FOR BULLETIN

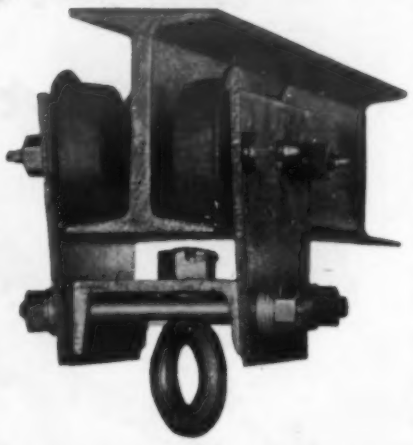
SEND SAMPLES OR BLUE PRINTS — QUICK DELIVERY

DI MACHINE CORP.
DIVISION OF DIEBEL DIE & MFG. CO.
3652 N. LINCOLN AVE. CHICAGO

▲ Mention Item NED-3944 when writing ▲

GRAY TROLLEYS

For Any Size I-Beam



GRAY TROLLEYS are designed to meet the demand of industry for a trolley with closest possible headroom. They safely and efficiently raise loads are easily transferable through the shop, and are equipped with New Type, Thoroughly Sealed, Gray Ball Bearing Trolley Wheels.

Long, trouble-free service is what you get with every GRAY TROLLEY and that's an important consideration today. Made in 250-lb. to 2-ton standard capacity sizes adjustable to suit various I-Beams. We would like you to have our bulletin which describes and illustrates in detail our TROLLEYS and our TROLLEY WHEELS. Send for it now!

GRAY HUB COMPANY
Incorporated 1922
17265-17403 GABLE AVENUE DETROIT, MICHIGAN

▲ Mention Item NED-3945 when writing ▲

RUBYFLUID users are RUBYFLUID boosters

HERE'S WHAT C. E. L. OF IDAHO WRITES . . . .

"Congratulations!—I discovered a soldering flux that is just what the doctor ordered. It cleans, makes solder stick to any shiny surface. It has a nice color, odor and no objectionable fumes. I can recommend it for every soldering need."

Rubyfluid Liquid and Paste Flux and Ruby's Stainless Steel Flux users are enthusiastic in their praise. This testimonial is typical of many in our files. Why do not you enjoy the advantages of using Rubyfluid? You'll like the way it acts fast, properly conditioning the metals so that a neat strong joint is produced without fuss or bother. Rubyfluid gives off no objectionable or harmful fumes.

Available from your jobber or write direct.

RUBY CHEMICAL CO.
72 McDowell St. Columbus, Ohio

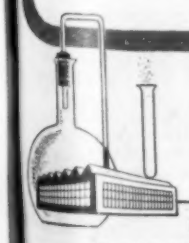
Rubyfluid

▲ Mention Item NED-3946 when writing ▲

EMERGENCY EQUIPMENT CONTAINERS · ARCTIC TENTS
CLOTHING BAGS · BARRAGE BALLOONS · BARRACK BAGS
FOOD BAGS
RAINCOATS
FIELD BAGS
PAULINS
INFLATABLE BOATS
SHOULDER PADS · FLOTATION BLADDERS · LIFE RAFT
BLANKETS · IMMERSION SUITS · JUNGLE HAMMOCKS

Can these Union Bay State Cements help you in the Seam-Sealing and Cementing of . . .

If you have a contract for seam-sealing or cementing synthetic or rubber coated fabrics — or are considering one . . . write for samples and complete information on our tested line of cements.

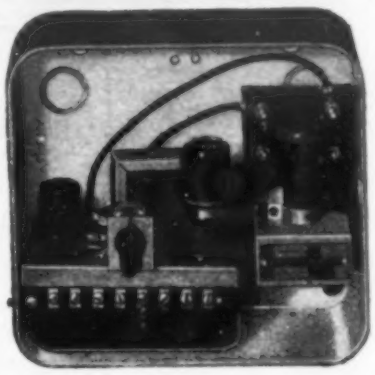


UNION BAY STATE Company
50 HARVARD ST., CAMBRIDGE, MASS.

▲ Mention Item NED-3947 when writing ▲

ELECTRONIC TIME RELAY

Safe in explosive and corrosive atmospheres, Durakool adjustable time relay is combination of two hermetically sealed units. Relays are built to control industrial processes in which extreme accuracy and long lived performance are required. Principle of operation is electronic, assuring freedom from trouble caused by mechanical lag or wear, manufacturer claims.

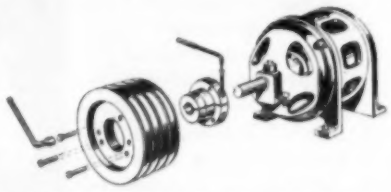


Only moving part is fast operating steel encased plunger working in hydrogen pressure atmosphere displacing mercury. Time settings are continuously variable within range and may be adjusted to required operating point. Standard models cover time ranges from 0.05 to 0.5, 0.10 to 10 and 1 to 100 seconds respectively. Special models can be produced with ranges up to 5 minutes. Contact capacities are available up to 75 amperes, either normally open or normally closed. Made by **Durakool, Inc.**, 1051 N. Main St., Elkhart, Ind.

▲ Mention Item NED-3948 when writing ▲

DETACHABLE SHEAVES

Ease, speed and safety of mounting or removing from shaft are features of Quick Detachable sheaves for multiple V-belt drives. Socket wrench is only tool required. Illustration shows simplicity with which QD sheaves are mounted.



Tapered, split hub is slipped onto shaft in line with keyway. Headless cap screw is tightened down with inserted key, clamping hub firmly and producing virtual press fit on even oversize or undersize shafts. Sheave is attached to hub by inserting pull-up bolts and tightening them evenly with socket wrench. Bolts protrude through sheave and engage with threaded holes in hub to form immovable union.

Removal is effected by reversing procedure. After unscrewing pull-up bolts, two of them are inserted in special tapped holes in sheave and tightened. They act as jack screws to force sheave from hub without damage to shaft or motor bearings.

Standardized sizes are available for practically all multiple V-belt applications. Prices are claimed to be as low as standard sheaves. Made by **Pyott Foundry & Machine Co.**, 328 N Sangamon St., Chicago, Ill.

▲ Mention Item NED-3949 when writing ▲

DO YOU KNOW?

Directed specifically to women industrial workers, new sound slide film is entitled "To the Women." By dealing directly with health problems encountered by women workers, this film is designed to reduce absenteeism. This is one of five films in Sound-Health-Service series developed for industrial showings. Available from Commercial Films, Inc., 1800 E. Thirtieth St., Cleveland, O.

▲ Mention Item NED-3950 when writing ▲

Spraco Flat Spray Nozzle

SPRACO NOZZLES

For industrial processes involving washing, cooling, spraying, scrubbing, and quenching, Spraco Nozzles are available in a complete range of types, sizes, and capacities. Standard materials are cast iron, brass, and bronze, but nozzles for use with corrosive liquids and gases can be supplied from any machinable alloy (with suitable priorities).

Write for Nozzle Catalog

SPRAY ENGINEERING CO.
106 CENTRAL ST., SOMERVILLE, MASS.

▲ Mention Item NED-3951 when writing ▲

IDEAL WIRE STRIPPERS

This IDEAL Rotary Wire Stripper, driven by a powerful motor, is unequalled for rapid production stripping; quickly removes cotton, silk or rubber insulation from fine, stranded or solid wire without cutting, scraping or nicking wire.

Strips wire up to ½ in. diameter, stranded or solid, clockwise or counter-clockwise. Blades are made of finest tool steel.

COMPLETE LINE OF WIRE STRIPPERS AVAILABLE
PROMPT SHIPMENT
Write for Detailed Literature

IDEAL Sycamore
★ IDEAL COMMUTATOR DRESSER CO ★
1032 Park Avenue Sycamore, Illinois
Sales offices in all principal cities.

▲ Mention Item NED-3952 when writing ▲

THIS IS THE WHEEL* MR. JONES

● Maybe you were stumped by grinding jobs before, but they won't worry you any more.

300 shapes and sizes—every grade and grain—there is a Chicago Mounted Wheel custom-built to take on *any* grinding problem. Each wheel is a whirling point of power that turns your jobs out smooth—and in a hurry.

PROMPT DELIVERY

Action is the keynote from the moment your order comes in. Our wartime set-up concentrates on mounted points and grinding wheels 3″ in diameter and under. —Production is stepped up and keeps pace with demand. Another advantage to you is our central location.

TEST WHEEL FREE — Tell us the job, type grinder and size wheel you use and we'll send one prepaid.

*Half a century of specialization has established our reputation as *the* small wheel people of the abrasive industry.

NEW CATALOG — Shows Chicago Mounted Wheels in actual colors, also portable electric tools and time-saving accessories.

AMERICA'S HEADQUARTERS FOR MOUNTED WHEELS SMALL GRINDING WHEELS

CHICAGO WHEEL & MFG. CO.
1101 W. Monroe St., Dept. NE, Chicago, Ill.

NE-8
☐ Send Mounted Wheel Catalog
☐ Free Wheel. Size.....
☐ Also interested in Grinding Wheels
Name .....
Address .....

▲ Mention Item NED-3953 when writing ▲

RYERSON CERTIFIED STEELS

Prompt Shipment from 10 Strategically-Located Steel-Service Plants... Principal products include—Alloy Steels, Tool Steels, Stainless Steel, Hot Rolled Bars, Hoops and Bands, Beams and Heavy Structurals, Channels, Angles, Tees and Zees, Plates, Sheets, Cold Finished Shafting and Screw Stock, Strip Steel, Flat Wire, Boiler Tubes and Fittings, Mechanical Tubing, Rivets, Bolts, Nuts, Washers, etc. Write for Stock List. Joseph T. Ryerson & Son, Inc. Plants at: Chicago, Milwaukee, St. Louis, Detroit, Buffalo, Cincinnati, Cleveland, Boston, Philadelphia, Jersey City.

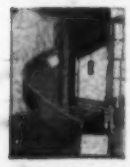
▲ Mention Item NED-3954 when writing ▲

Production STEPPED UP 16%

HERE are the results of a Logan Conveyor installation in a well-known manufacturing plant. In the words of a plant official:

"Before we installed Logan Conveyors, the whole or part time effort of from two to four people was required to keep the machine operators supplied with work. Since the installation of the conveyor, our transportation cost within the department is practically nothing. Because machine operators lose no time waiting for materials, production has been stepped up about 16%."

This is typical of many cases in Logan files. For information on boosting your production with conveyors, call in your nearest Logan engineer. Logan Co., Inc., 215 Cabel Street, Louisville, Ky.



Spiral Chutes and *Roller Spirals* provide "vertical" lowering by gravity. Many applications.

Live Rolls—Permit stopping of package on power-operated roll conveyor. See catalog.

Write today for the "KEY BOOK"

Logan Conveyors

▲ Mention Item NED-3955 when writing ▲

How to apply ELECTRIC HEAT to tank bottoms, flat or round

SEGMENT STRIP HEATERS

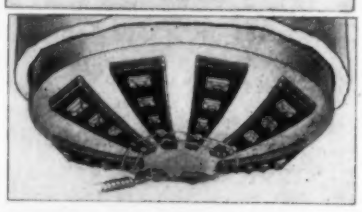
on flat tank bottom—weld 5/16" studs for "Utility Clamps" to tank bottom. Draw up segment strip heaters tightly. In applying insulation, leave air space between heaters and insulation.

CURVED SEGMENT STRIP HEATERS

on round bottom tank—weld studs to tank bottom and use "Utility Clamps" as above. Specify segment strip heaters curved to spherical radius required.

CHROMALOX ELECTRIC HEATING UNITS

in their many standard types and sizes, are meeting all kinds of industrial needs involving the heating of liquids, machine parts, ovens, tanks, etc. Our engineering staff offers their experienced cooperation in bringing you the benefits of electric heat. Write us the conditions of your job, with a simple pencil sketch. For valuable reference data, ask us for the Chromalox 64-page catalog.



Chromalox Segment Strip Heaters are available in three sizes, and either flat or curved to spherical radii of 3 to 6 ft.

Utility Clamp

EDWIN L. WIEGAND COMPANY
7500 Thomas Blvd. Pittsburgh, Pa.

▲ Mention Item NED-3956 when writing ▲

IDENTIFICATION UNIT

Complete identification protection is provided by Sealtight identification unit which consists of clear, acetate plastic envelope 4-3/16 x 2-11/16 inches in size, permanently

sealed on three sides. Unit permits displaying of photograph, signature, fingerprint and description of bearer.

After card has been filled out and photograph attached it is inserted in opened end of case which is then permanently sealed. Photo and card are made part of envelope by Plasticweld. Any tampering would deface identification. Assembly of unit requires no tools, presses or other accessories. Made by The Royal Emblem Co., 42 John St., New York City.

▲ Mention Item NED-3957 when writing ▲

PARTS CLEANING MACHINE

Embodying power of larger industrial models, overall size of heavy duty machine with larger work baskets and surging centrifugal action, this General precision cleaning machine is particularly adapted to parts cleaning problems involved in production of electronic tubes. Equipment is compact and may be operated by women.

Features include air cooled fractional horsepower motor, 2¼-inch deep by 3⅝-inch inside diameter work basket with subdivided three compartment nesting basket, and variable action of basket in solutions. By turning on thermostatic switch, surging centrifugal motion of basket is produced with speeds varying as required. Effective agitation is claimed to result in high percentage of acceptable clean parts.

Machine effects cleaning, rinsing, polishing and drying of small parts without unnecessary handling. Made by L & R Manufacturing Co., Dept. K, 54-56 Clinton St., Newark, N. J.

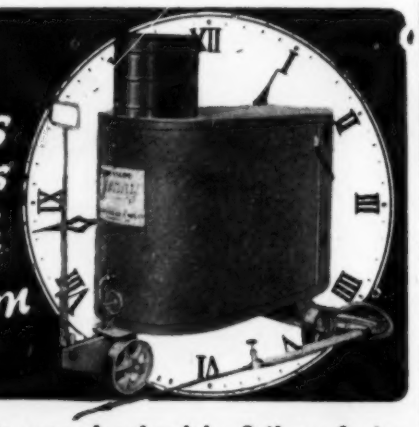
▲ Mention Item NED-3958 when writing ▲

DO YOU KNOW?

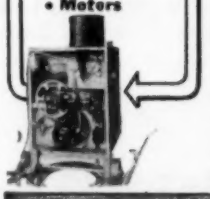
"The ABC of Electronics at Work" is title of practical booklet which explains six basic ways in which electronic tubes function. Tube construction, typical circuits and industrial applications are covered. How tubes rectify, amplify, generate, control and transform light into current and current into light are shown. Booklet No. B-3260 issued by Westinghouse Electric & Mfg. Co., East Pittsburgh, Pa.

▲ Mention Item NED-3959 when writing ▲

SAVE PRECIOUS MAN-HOURS for greater war production



HYPRESSURE JENNY CLEANS
- Machinery
- Floors
- Walls
- Windows
- Buildings
- Skylights
- Tank Cars
- Cranes
- Conveyors
- Trucks
- Motors



Do your cleaning jobs 8 times faster the *Jenny* STEAM-SPRAY WAY

One man, using Hypressure Jenny, can do more cleaning than 8 men can accomplish by out-moded hand methods . . . and do it better. Clean machinery steps-up production. Cleaning often reveals cracks and defects preventing breakdowns and delays. Jenny Steam-Spray Cleaning before repairs saves 25% to 40% of mechanics' time lost wiping tools and equipment. Jenny cleans windows providing better light for safer operation . . . keeps floors clean for rapid plant traffic . . . reduces fire hazards. The Jenny Steam-Spray Way is quick, economical, efficient. Write today for literature and prices!

HOMESTEAD VALVE MFG. CO. Makers of Peak Performance Valves for 50 Years 1892 1942
P. O. BOX 84 • • • • CORAOPOLIS • • • PENNSYLVANIA

▲ Mention Item NED-3960 when writing ▲

SAFE-LINE
WIRE ROPE CLAMPS

Write for details of this—the only PERFECTED wire rope clamp on the market. Used by the Armed Forces and thousands of industries.

NATIONAL PRODUCTION COMPANY
4557 ST. JEAN AVENUE DETROIT 13, MICHIGAN

▲ Mention Item NED-3961 when writing ▲

Plastics Cut Copper Content from 6 Pounds to 4 Ounces *in Victory Flush Valve*

Victory Valve Parts Molded by Chicago Molded Products Corp.

Corrosion Resistance, Toughness, Dimensional Stability Are Important Advantages Gained with BAKELITE Plastics . .

BY TURNING to BAKELITE Plastics for several important parts of its Victory Type Flush Valve, The Sloan Valve Company has reduced the amount of copper used in such fixtures from 6 pounds to less than 4 ounces! Savings in this strategic metal are estimated at 4,400,000 pounds annually. This new valve is better in many ways than all-metal valves, and is far more rapidly and economically fabricated.

Water resistance and mechanical strength necessary for the plastic pipe required a Cellulose-Acetate Plastic since this material is especially adaptable to the molding of long, thin-walled sections. For the same reason, this material is also employed as a liner for the malleable iron valve body. And, a transparent Cellulose-Acetate Material for the vacuum breaker body permits, for the first time, inspection without dismantling.

For other parts, BAKELITE Polystyrene and water-resistant BAKELITE Phenolic Materials were chosen. Polystyrene, because of its dimensional stability and extremely low water absorption, is used for the closely fitting piston body and piston cover, and also for the thin vacuum-breaker flapper and its small weight holder. A water-resistant Phenolic, because of its toughness, is used for the plunger and plunger relief valve. The valve handle required mechanical strength primarily, so this was molded from a general-purpose BAKELITE Phenolic Material.

The use of BAKELITE Plastics has effected many important manufacturing economies. The plunger relief valve, for example, was formerly fabricated from metal by combining rod stock with rolled sheet stock, which required three separate operations. The BAKELITE Plastic part, by contrast, is molded in one piece—as are all of the plastic units—in a single operation. Machining, polishing, plating, and other finishing steps are avoided.

Bakelite Engineering and Development Laboratories welcome the opportunity of aiding you in your current, essential production problems. As a first step toward their solution, write for Booklet 10, "A Simplified Guide to Bakelite Plastics."

BAKELITE CORPORATION, 30 E. 42nd St., New York
Unit of Union Carbide and Carbon Corporation

UCC

BAKELITE
PLASTICS HEADQUARTERS

▲ Mention Item NED-3962 when writing ▲

Immediate Shipment
SHOP BOXES

STACKING BOXES

An ideal all-purpose shop box. Sturdy all-welded construction. Heavy skids act as a positive stacking lock and re-inforce box at point of maximum wear.

No. 601—10"x16"x6"—18 Gauge—**$ .95**
No. 602—12"x18"x8"—16 Gauge—**$1.25**

Prices F. O. B. Factory, Philadelphia—Any Quantity!

Order Today—Write, Wire or Phone

AMERICAN METAL WORKS, Inc.
1503 GERMANTOWN AVE., PHILADELPHIA 22, PA.

▲ Mention Item NED-3963 when writing ▲

LKER-TURNER MACHINE TOOLS
ing the bell" at Bell Aircraft

ction clearly shows the advantages of using ools that fit the job. Walker-Turner units, using , handle many jobs better than heavier equip- plified design enables unskilled workers to quicker; women operators find them less ti d their unusually wide range of cutting speeds ng the optimum speed for the job. ey could cure some of your pro- ubles, too.

R-TURNER COMPANY, INC.
AN STREET PLAINFIELD, N. J.

Place Corner Bill Smith

MACHINE TOOLS

DRILL PRESSES — HAND AND POWER FEED • RADIAL DRILLS
METAL-CUTTING BAND SAWS • POLISHING LATHES • FLEXIBLE SHAFT MACHINES
RADIAL CUT OFF MACHINES FOR METAL • MOTORS • BELT & DISC SURFACERS

▲ Mention Item NED-3964 when writing ▲

STURTEVANT QUALITY

Help make U.S. Aircraft Engines the WORLD'S finest

TURTEVANT
ORQUE
RENCHES
rotect...

erformance and life of U.S. Aircraft engines—only travel in the tool but are used to control orques applied in their ufacture. They are used ure the uniform "set" of vital , to prevent uneven strains warping, to gauge the set of plugs, to measure frictional etc. Sizes to accurately ure torque from 0 to 7200 in. They eliminate guess work and uard tightening. They are ating new accuracy in the ufacture of even the most e instruments . . . also come for the heaviest work.

ches of STURTEVANT, manufacturers of accurate wrenches, they have the beam which eliminates all , adjustments and fragile forms or moving parts. They manently accurate.

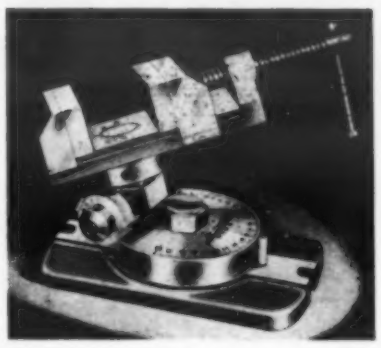
NO FRICTION ADJUSTMENTS MOVING PARTS FRAGILE MECHANISMS

CAPACITIES from 0 to 7200 inch pounds

P.A. STURTEVANT CO.
ADDISON QUALITY ILLINOIS

▲ Mention Item NED-3965 when writing ▲

ALL ANGLE VISE



Available in 3½, 4½ and 6-inch jaw widths, Hilco all angle Driv-Wheel movement vise has three accurate and legible protractor dials for horizontal, vertical and diagonal settings. Features include patented drive wheel motion which gives 2¾-inch lateral clearance; double swivel construction which permits any conceivable horizontal position; right angle clearance which allows perpendicular position without base obstruction and positive horizontal setting for 180-degree accuracy.

Vise is recommended for grinders, drill presses, milling machines, magnetic chucks and many other machine tools, but is especially adapted for Hilco universal cutter grinder. Vise was designed and engineered by Melvin Douglas & Associates. It is made by **Berco Mfg. Co.**, 429 W. Superior St., Chicago, Ill.

▲ Mention Item NED-3966 when writing ▲

HIGH IMPACT PLASTIC

Highly impact resistant, Bakelite BM-16468 molding material is black phenolic plastic having string filler, rather than chopped fabric which is employed for other types of shock resisting materials. Impact strength of this material is about 20 to 25 times greater than general-purpose phenolics.

Molded test specimens indicate this product has following physical properties: Compressive strength is 27,500 to 32,700 and 15,600 to 18,200 pounds per square inch under parallel and transverse stress, respectively. Transverse tensile strength is 7500 to 8500 pounds per square inch. Parallel and transverse flexural strengths are 12,000 to 12,900 and 10,200 to 14,200 pounds per square inch, respectively. Maximum deflection is 0.086 to 0.122 inches under parallel stress and 0.095 to 0.118 inches under transverse stress. Impact strength under parallel stress, Izod, is 3.49 to 4.84 foot-pounds per inch of notch. Made by **Bakelite Corp.**, Dept. E, 30 E. Forty-second St., New York, N. Y.

▲ Mention Item NED-3967 when writing ▲

AUTOMATIC COLLET CLOSER

Designed to fit any lathe with ¾-inch spindle hole, Dix Wilder automatic collet closer is easily and quickly installed. It will accommodate 1-A collets. All parts subject to wear are hardened and ground to give long life performance, it is claimed. Features include positive locking, ball bearing adjustment, absence of pins, sleeve and liners, resistance to rust and small number of parts. Immediate delivery is possible to shops and plants having AA5 priority or better. Made by **Dix Mfg. Co.**, 603 E. Fifty-fifth St., Los Angeles, Calif.

▲ Mention Item NED-3968 when writing ▲

CARBOZITE Over Seas
SHOP COATING

For the protection of metal and metal parts, finished and unfinished—in storage or for overseas shipments.

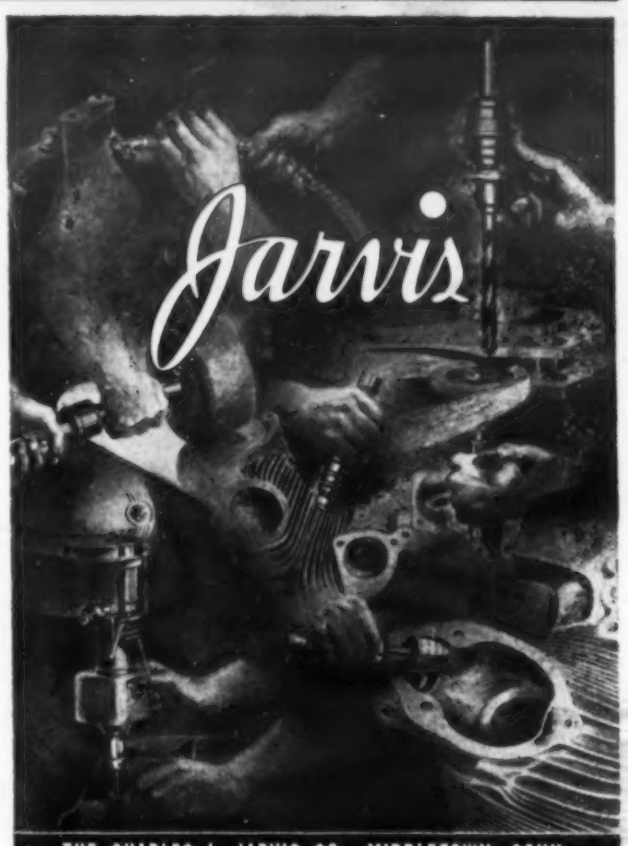
Used for several years, Carbozite O. S. Shop Coating has been developed and produced to meet specifications of various governmental departments, Lend-Lease provisions, and is ideal for industrial war production applications.

Applied by brush, dip or spray. Drying time—15 to 30 minutes. Quickly and easily removed by naphthas at destination.

Write for data!

CARBOZITE CORPORATION
First National Bank Building
Pittsburgh (22), Pennsylvania

▲ Mention Item NED-3969 when writing ▲



THE CHARLES L. JARVIS CO., MIDDLETOWN, CONN.
TAPPING ATTACHMENTS • FLEXIBLE SHAFT MACHINES • GROUND ROTARY FILES

▲ Mention Item NED-3970 when writing ▲

POSITIVE ACTION...
Closer Temperature Control!

There's nothing mysterious about the superior control furnished by Foxboro On-Off Temperature Controllers. It's a matter of simpler, sounder design that insures positive control action for slightest temperature deviations. No frictional lags . . . no lost motion . . . no throttling effect.

Sturdily constructed . . . pneumatic operation . . . filled-type thermal system. Automatic direct-connected recording unit gives continuous accurate records, free from detent action.

Write for Bulletin 225-2 describing various models. **The Foxboro Company, 134 Neponset Avenue, Foxboro, Mass., U. S. A.** Branches in principal cities of U. S. and Canada.

Availability of these instruments now temporarily restricted due to emergency war demands.

FOXBORO Reg. U. S. Pat. Off. TEMPERATURE CONTROLLERS

▲ Mention Item NED-3971 when writing ▲

JOEY ON·THE·JOB SAYS . . .

JOMAC
Heat-Resisting, Long-Wearing Gloves

A special pile knitting machine is used to achieve the remarkable Jomac Fabric which is helping to lick the many hot and heavy jobs in America's busy shops. Jomac's "cushion" loops give added life and wear . . . a sturdy, protective glove that allows constant handling of metals too warm to touch. Jomac Gloves can be laundered repeatedly, kept clean . . . and thus minimize the dangers of skin infections.

JOMAC INDUSTRIAL GLOVES
C. WALKER JONES CO.
6135 N. Lambert St., East Germantown, Philadelphia 38, Pa.

▲ Mention Item NED-3972 when writing ▲

EDUCATION IS THE BASIS FOR SAFETY

Information supplied by the National Safety Council

Labor, particularly inexperienced labor, cannot be expected to recognize the full penalties of carelessness in the shop. Management has assumed the responsibility of supervising safety measures, and has cooperated in establishing sound safety rules.

Nevertheless, the large increase in labor personnel due to war needs, plus the influx of inexperienced men, have resulted in a substantial increase in lost time accidents.

Even assuming that the obvious safety measures with regard to operating machinery, electrical equipment and shop traffic have been installed, two factors—education and eternal vigilance—determine the real effectiveness of any safety program.

Both are the responsibility of the supervisory staff, from foremen up. The foreman who does a thorough job of educating his particular group in safety rules and cooperative enforcement has done much to cut down accidents. Management that takes an active interest in both safety education and the enforcement of safety measures has taken a great step forward in reducing wastage of irreplaceable production time.

CLIMAX FURNISHES AUTHORITATIVE ENGINEERING DATA ON MOLYBDENUM APPLICATIONS. MOLYBDIC OXIDE, BRIQUETTED OR CANNED • FERROMOLYBDENUM • "CALCIUM MOLYBDATE"

Climax Mo-lyb-den-um Company
500 Fifth Avenue • New York City

MOLY

▲ Mention Item NED-3973 when writing ▲

Keep 'em Moving
IN FACTORY • WAREHOUSE • DOCK

MADSEN *Cargo* TRUCKS

SPEED UP the handling of assemblies, parts and finished products with Madsen trucks. These four-wheel hand trucks or tractor trailers of 2000-lb. capacity can be coupled together in a train. The large truck has a capacity of 10 tons. Handles lengths of heavy pipe, lumber and structural steel. Models in stock—

WRITE FOR NEW CATALOG!

MADSEN IRON WORKS, LTD.
5631 Bickett St. • Huntington Park, Calif.

▲ Mention Item NED-3974 when writing ▲

ANNOUNCING
Atlas ALL-PURPOSE
COOLANT PUMPS

LATHES AND SCREW MACHINES
★
MILLING MACHINES
★
DRILLING MACHINES AND DRILL PRESSES
★
CUT-OFF MACHINES SAWS, ETC.

FOR ALL TYPES of MACHINE TOOLS

Now you can set higher production goals, reduce tool wear, and secure better finishes. Install Atlas Coolant Pumps on your machine tools. Powerful centrifugal-type pumps handle any cutting fluid — permit flow adjustment from drip to stream. Two models equipped with universal or induction-type motor. Feed lines of durable extruded plastic. Ask your Atlas distributor for full details or write us. At present Atlas Coolant Pumps are ready for prompt delivery.

ATLAS PRESS CO.
823 N. Pitcher St., Kalamazoo, Mich.

▲ Mention Item NED-973 when writing ▲

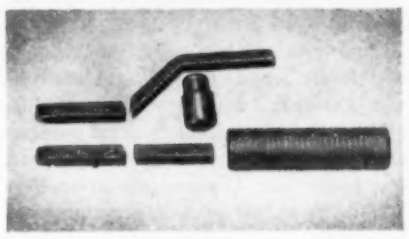
PLANT BROADCASTING UNIT

Voice paging or music broadcasting in war production plants can be handled readily on this low cost, packaged unit. Plant Broadcaster operates from 20 to 40 loud speakers and will serve any area up to 100,000 square feet of floor space. Cabinet requires minimum of floor space and unit may be plugged into any lighting circuit.

Control cabinet may be located near telephone switchboard or placed in any convenient location, with connection to microphone and key cabinet at switchboard. Paging calls may be sent over system while music is being played by means of automatic control which decreases music volume. This permits paging call to be heard clearly and yet continues thread of music melody. Made by **Operadio Mfg. Co.**, Dept NED, St. Charles, Ill.

▲ Mention Item NED-3976 when writing ▲

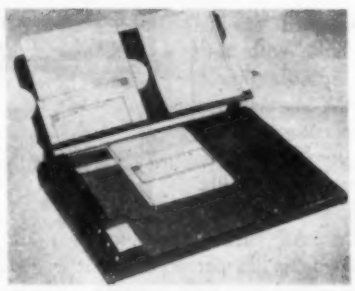
ROD HOLDER INSULATORS



Supplied for use on tips and rod grips and as handles and cups, these insulators for welding rod holders are molded to exact shape ready for installation. Replacements can be made right on job in few minutes time, eliminating need for factory maintenance. Ease of replacement also insures longer rod holder life by reducing exposure of steel parts to rod heat and electrical contacts. Molded plastic used is light weight and heat and shock resistant. Insulators are available in quantity for three most commonly used sizes of rod holders. Made by **Rasmussen Iron Works**, 308 W. Philadelphia St., Whittier, Calif.

▲ Mention Item NED-3977 when writing ▲

PAYROLL FORM HOLDER



Made entirely of wood, Form-Master payroll form holding device is claimed to save 61.6 per cent of man-hours in payroll departments recently surveyed. Device expedites posting of payroll data. Employee's checks or cash statements, summary sheets and individual earnings records are posted at same time. Forms are perfectly registered for speed and accuracy of posting. All vital materials have been eliminated in construction. Made by **The Todd Co.**, 1150 University Ave., Rochester 3, N. Y.

▲ Mention Item NED-3978 when writing ▲

Exploding old assembly methods..

The spring tension principle of the SPEED NUT SYSTEM has revolutionized assembly methods everywhere. Now, in many cases, one SPEED NUT performs multiple functions, reduces number of parts, eliminates handling operations and drastically cuts weight and production costs.

These are only 5 out of dozens of SPEED NUT designs that have quickly replaced conventional assembly methods. Write for our new summary catalog No. 185.

TINNERMAN PRODUCTS INC. • 944 Fulton Rd., Cleveland, Ohio

Speed Nuts — FASTEST THING IN FASTENINGS!

▲ Mention Item NED-3979 when writing ▲

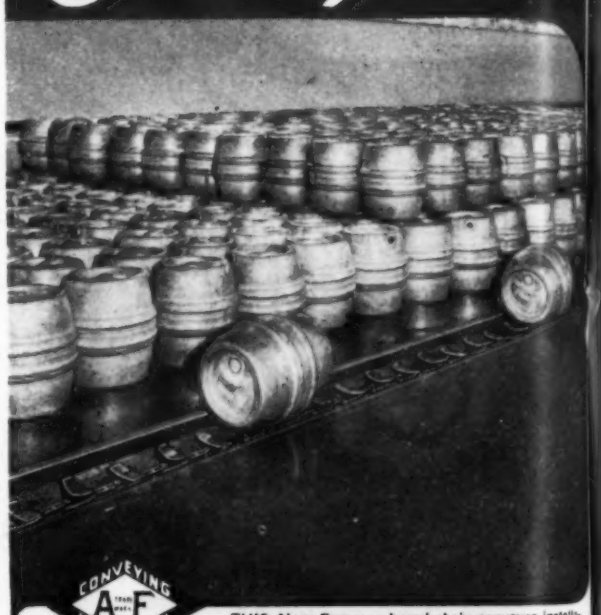
DESIGNED FOR YOUR JOB

Have you considered Carbon Seal Rings? Does your application demand low friction, long wearing and non-abrasive qualities? We have developed special carbons to meet varying conditions of pressure, temperature, speed, and character of material to be sealed. Our engineers are available for consultation on your sealing problems. Bulletin sent on request.

PURE CARBON COMPANY, Inc.
2130 Nobrac Street Saint Marys, Pa.

▲ Mention Item NED-3980 when writing ▲

ALVEY-FERGUSON
Conveyors



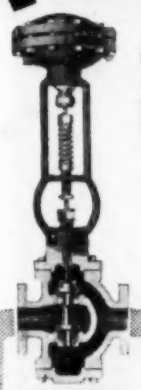
CONVEYING MACHINERY

THIS Alvey-Ferguson barrel chain conveyor installation is another example of more efficient product handling by means of endless-stream A-F Scientifically Planned Conveyors. If you have an "indoor transportation" problem write today and our engineers will help you solve it. Or write for new conveyor catalog showing all types of A-F Conveyors in war production plants.

THE ALVEY-FERGUSON COMPANY, 31 Disney Street, Cincinnati, Ohio

▲ Mention Item NED-3981 when writing ▲

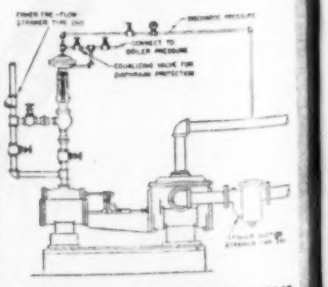
FISHER EXCESS OR DIFFERENTIAL PUMP GOVERNOR



This Fisher Type 444 Governor is designed to control a steam driven reciprocating or turbine driven Centrifugal Boiler Feed Pump and to maintain the discharge pressure from the pump at a set excess or differential over and above the boiler steam pressure.

FEATURES

Spring controlled — suitable for vertical or horizontal installation. Provides easy throttling control — balanced inner valve — deep gland stuffing boxes — multiple cord diaphragm. Sizes ½" to 6" — differential pressure range 10 to 100 pounds. Write for Bulletin B.



FISHER GOVERNOR COMPANY
Fisher Bldg., Marshalltown, Ia.

▲ Mention Item NED-3982 when writing ▲

ALSOP "SEALED DISC" FILTERS
for every Filtering Job.

The one sure way to keep liquids clean, with all impurities removed is by "Sealed Disc" Filtration using.

For Water, Chemicals, all kinds of Oils, plating solutions—any kind of liquids, are completely clarified to do a finer job or make a better product.

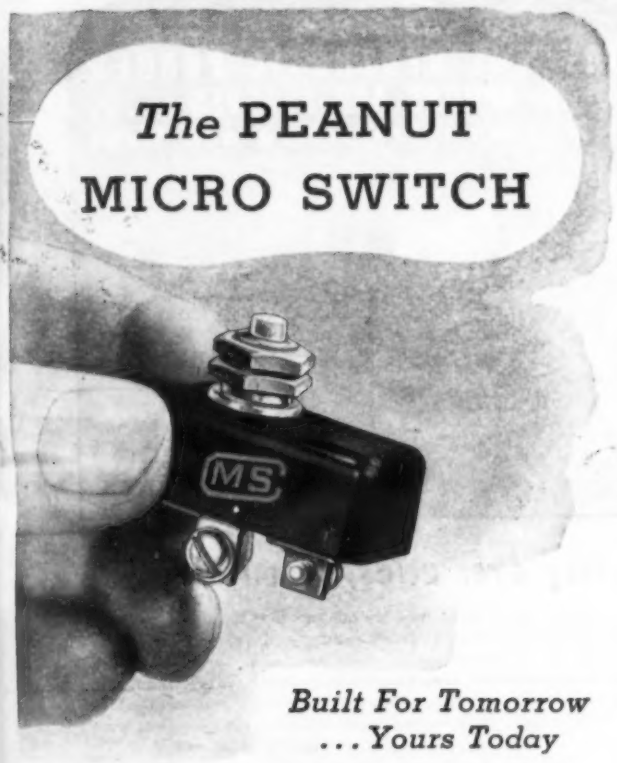
Made in portable or pipe line connected units, easy to operate and maintain.

Let us prove these statements
Write to

ALSOP ENGINEERING CORP.
26 Main Street Milldale, Conn.

ALSOP "SEALED DISC" FILTERS

▲ Mention Item NED-3983 when writing ▲



Built For Tomorrow ... Yours Today

Designed for post war use, the Peanut Micro Switch so filled the bill for a number of military requirements that we are now making them in large scale production.

This diminutive switch is smaller than the basic Micro Switch, more robust, more resistant to vibration, is lighter, lower in cost and has a higher electrical rating.

The unenclosed Peanut Micro Switch weighs .019 lb., encased in Bakelite housing the weight is .048 lb. This switch resists vibration and acceleration up to 300 times gravity. Operating force is 32 ounces maximum and the movement differential is .036" maximum. Convenient stem mounting is provided with the enclosed housing. The construction provides inherent overtravel beyond the point of operation for most uses.

Contact separation up to .085" can be varied in manufacture to meet requirements. This wide gap is particularly valuable on D.C. loads. To provide the high unit contact pressure for low voltage applications, contacts of 99.95% pure silver are formed with a knurled surface.

Experience and skill of Micro engineers is at your service. Send for information.

Micro Switch Corporation, Freeport, Illinois
Branches: 43 E. Ohio St., Chicago (11)
11 Park Place, New York City (7)
Sales and Engineering Offices: Boston • Hartford • Los Angeles

Peanut Micro Switch Ratings

DIRECT CURRENT

VOLTS D.C.	HEATERS Sea level amp.	HEATERS 45,000 ft. amp.	LAMPS Sea level amp.	LAMPS 45,000 ft. amp.	MOTORS—RELAYS & SOLENOIDS Sea level amp.	MOTORS—RELAYS & SOLENOIDS 45,000 ft. amp.
†) 24-28	40	40	7	7	30	25
*) 110-115	1.5	1.2	1.5	1.2	1.2	0.75
*) 220-230	0.6	0.6	0.6	0.6	0.5	0.3

†) *Aircraft use of 25,000 operations* *) *Not less than 100,000 operations*

ALTERNATING CURRENT

Volts A. C. 60 cycle	Heater amp.	Lamp amp.	Inductive 75% P. F. Amperes
110	20	10	15
220	10	5	8

Not less than 100,000 operations

MOTORS 110-220 V. A. C. motor rating ½ h. p.

The trademark MICRO SWITCH is our property and identifies switches made by Micro Switch Corporation

© 1943

MICRO SWITCH

Made Only By Micro Switch Corporation . . . Freeport, Illinois

▲ Mention Item NED-3984 when writing ▲

FIRE EXTINGUISHER VALVE

Applicable to any size carbon dioxide fire extinguisher of hand type, Squeez - Grip valve operates by lever directly over carrying handle of extinguisher. By merely applying pressure or squeezing with one hand, valve is opened and gas is discharged. On releasing pressure, valve closes and gas discharge is cut off.

Valve can be opened and closed without setting down extinguisher. Operator carries extinguisher with one hand and holds discharge horn in other. He can start or stop discharge while in motion, thereby losing no time or gas while maneuvering around fire. On closing, valve is forced tightly against its seat by gas pressure in cylinder. There are no replacement parts such as sealing discs. Valve does not have to be taken apart for recharging and reassembling after filling. Made by **C-O-Two Fire Equipment Co.**, 12 Empire St., Newark, N. J.

▲ Mention Item NED-3985 when writing ▲

METAL BASE COAT

Passivating or cooling hot galvanizing so that paint will hold and work can be kept in lasting good condition, Turco Redi-Paint can be applied by hand or by tank immersion. This compound chemically changes surface of metal. It does this by displacing slick, oily surface typical of galvanized metal with roughened, toothy surface to form tight bond with paint. It also neutralizes alkalinity and forms inactive film which will not become alkaline and which is resistant to corrosion.

Among advantages claimed for this base coat is color control. Dark tint develops on areas properly treated, leaving untreated area conspicuously bright. When applied by hand, preparation is simply wiped on full strength or diluted with water. When proper color develops, surplus liquid is squeezed off and surface is wiped with clean, dry cloth. Made by **Turco Products, Inc.**, Dept. 25, 6135 South Central Ave., Los Angeles, Calif.

▲ Mention Item NED-3986 when writing ▲

AIRCRAFT PROPELLER STAND

Aircraft servicing is facilitated with this Model 82-D Propstand which prevents propellers from being sprung or damaged. Three-blade propellers up to 19 feet in diameter and four-blade propellers up to 17 feet in diameter can be handled. Three hub sizes are available to prevent damage to splines.

Stand is mounted on 8-inch casters for easy rolling and stops for locking in position. Three shelves are provided for storage of parts and tools. Doors on two upper compartments have latches and provision for padlocks. Made by **Pacific Engineering Corp.**, 3123 San Fernando Rd., Los Angeles, Calif.

▲ Mention Item NED-3987 when writing ▲

★ ★ *The Answer to* ★ ★
Simplified ★ Faster ★ Low Cost
DY-NAMIC BALANCING

Leading manufacturers now using the new, lower cost Bear Dy-Namic Balancing Machines report these advantages:

IN PRODUCTION. Simplicity of operation . . . Less Time to Dy-Namically Balance to accuracy of Government specifications . . . **detection of errors in pattern designs,** leading to improvements in moulding.

IN PRODUCT PERFORMANCE. Reduction in wear . . . elimination of noise and vibration . . . improved efficiency . . . less frequent adjustment or repair.

WIRE, PHONE, or WRITE details of your balancing problem, or write for FREE DATA BOOK describing the many Bear machines available to those with war industry priorities. Address Bear Mfg. Co., Industrial Division, Dept. NFD, Rock Island, Ill.

1 **In One Operation Shows Static, Dy-Namic and Static Dy-Namic**

2 **Micrometer Dials—Calibrated to show approximate quantity of correction.**

3 **Adjustable Bed—Permits balancing of many sizes and types of bodies on one machine.**

▲ Mention Item NED-3988 when writing ▲

These handy wall charts will show you in a jiffy, just what belts to order if you know the number on your old one.

Lengths, weights and prices are all listed for both Browning "Gripbelts" and F. H. P. Supercords.

They're free to those who need them. Write for yours today. You'll enjoy the trouble free performance of Browning Belts.

BROWNING MANUFACTURING COMPANY
Incorporated
MAYSVILLE, KENTUCKY

▲ Mention Item NED-3989 when writing ▲

STRONG LINKS
in the world's greatest production schedules

CM *Herc-Alloy* Steel Chain with the patented "Inswell" electric weld is helping America maintain the world's greatest production schedules by providing safety and efficiency in the transportation and handling of materials. Fabricated from a special analysis heat treated alloy steel, the short, stubby links bridge square corners without gouging or kinking. *Get all the facts on Herc-Alloy Chain, today.* Descriptive catalog No. 44 sent on request.

CM HERC-ALLOY
STEEL CHAIN

COLUMBUS-McKINNON CHAIN CORP.
Affiliated with Chisholm-Moore Hoist Corporation
TONAWANDA, NEW YORK
BRANCH OFFICES: NEW YORK • CHICAGO • CLEVELAND

▲ Mention Item NED-3990 when writing ▲

TWIN

PRECISION

"NORMA-HOFFMANN"
BALL & ROLLER BEARINGS
for any
LOAD-SPEED or DUTY
ASK FOR CATALOG AND ENGINEERING COUNSEL
NORMA-HOFFMANN BEARINGS CORPORATION, STAMFORD, CONN. U.S.A.

▲ Mention Item NED-3991 when writing ▲

"THANKS, MR. DONAHUE . . . . I THINK YOUR PRETTY TOO!"

Pretty smart also because he's protecting his lungs with . . .

DUPOR No. 10 CHEMICAL CARTRIDGE RESPIRATOR

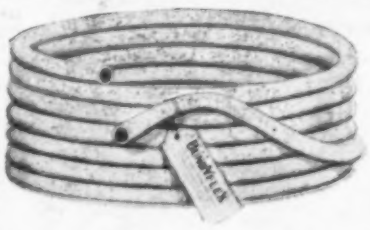
Not a gas mask—but ideal protection for chemical fumes, paint and lacquer sprays, smoke, etc. Has new colored plastic cartridge for quick identification. Sturdier than metal or paper—won't crush or corrode. Price $54 doz. Sample $4.50 postpaid.

H. S. COVER, Chippewa St., South Bend, Ind.

▲ Mention Item NED-3992 when writing ▲

COPPER COATED STEEL TUBE

Copper fused and copper coated on both inside and outside, Bundyflex steel tubing can be bent to practically any shape, hard or soft soldered, brazed or welded and used for many purposes for which ordinary copper tubing was required previously. Tubing is stronger than copper tubing and has higher resistance to vibration fatigue. All standard compression, flared or inverted flare fittings can be used. Sizes range from ⅛ to ⅝-inch outside diameters.

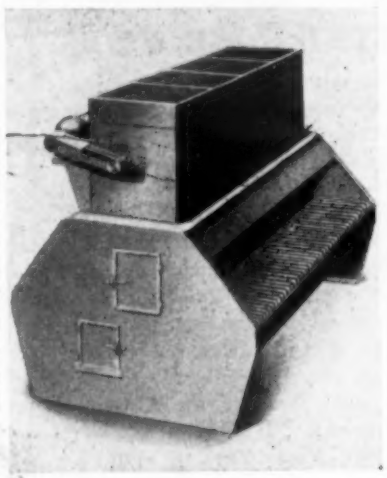


Tubing may be used as replacement for copper tubing on automobiles, trucks, oil burners, plumbing, refrigerators and industrial equipment. Sizes from ⅛ to ⅜-inch are double wall tube. Copper coating on inside and outside is fused into basic steel tubing. Distributed by Everhot Products Co., 2057 W. Carroll Ave., Chicago 12, Ill.

▲ Mention Item NED-3994 when writing ▲

VENTILATED WORK BENCH

Effective removal of dust from bench operations such as grinding, filing, chipping, buffing, cleaning and polishing of ferrous, non-ferrous, plastic and vitreous parts is effected by this Multi-Wash ventilated work bench. Efficient control system provides for continuous dust removal. Operators are protected from dust and fumes created during operations.



Single and double-side models are available in any one of four arrangements. Illustration shows one of double type models having two working surfaces measuring 10 feet long by 30 inches wide. Either hardwood or steel grating can be furnished, first being preferred where safety against sparks is factor.

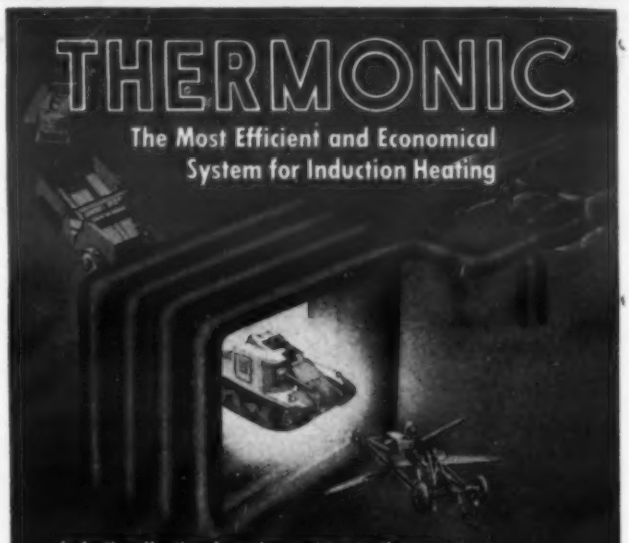
Room air is drawn over work by means of motor-driven fans located in top of air washing section. Space beneath grates is closed by dust hopper which slopes to longitudinal center tank. Dust particles in dirty air stream are driven against wall in back of bench or wet panel below grate and are washed downward into tank. Dust is also picked up and carried through grates into dust chamber, where it is impinged on wet surfaces. Final dust removal is accomplished by washing air in multi-wash collector units located within bench. Cleansed air is discharged back into work space through safety filter.

Solids are continuously flushed from collectors and discharged into settling tank. Periodical removal of solids from settling tank may be effected through doors at either end of unit. Liquid curtains serve for quenching of sparks. Water, oil or other liquid used as cleaning medium is circulated by centrifugal pump and is reused in collector system. Made by Claude B. Schneible Co., 3953 W. Lawrence Ave., Chicago, Ill.

▲ Mention Item NED-3995 when writing ▲

THERMONIC

The Most Efficient and Economical System for Induction Heating



Induction Heating has given wings to the production of vital war equipment . . . and in many cases has solved "impossible" problems. Reducing operations from minutes to seconds, this efficient, automatic system, at minimum maintenance and power cost — Brazes — Melts — Forges — Hardens and Anneals! Permits use of unskilled operators. Results are cleaner! Rejections are nil! If yours is a war production problem, you have first call upon our laboratory staff and its facilities. Sound counsel is important. Call us!

LARGEST PRODUCERS OF ELECTRONIC HEAT TREATING EQUIPMENT FOR BRAZING • MELTING ANNEALING • FORGING SURFACE HARDENING

INDUCTION HEATING CORP.
389 LAFAYETTE STREET, NEW YORK 3, N. Y.

▲ Mention Item NED-3997 when writing ▲

Surety
SURESEAL SYNTHETIC RUBBER GLOVES, APRONS AND SLEEVES . . . . .
For Maximum Protection and Wear

Victory over acids, chemicals, etc.

Learn all the facts right now about Sureseal Synthetic rubber gloves and protective garments. Surety developed—superior resistance to industrial acids, chemicals, oils, solvents, etc.—amazing wearing life over usual types—helps reduce huge toll of lost-time from dermatitis plague, the infection responsible for over 70 per cent of industrial compensation claims. Send for complete informative literature and delivery data today.

Largest and Original Producers of Synthetic Gloves
THE Surety RUBBER COMPANY
CARROLLTON, OHIO

▲ Mention Item NED-3998 when writing ▲

SOLVE YOUR IDENTIFICATION BADGE PHOTO PROBLEM

No Experience Necessary — No high-priced operator required. Arm holds subject in absolute focus. Your office boy or watchman can operate unit.

No Darkroom Needed — No cumbersome, expensive rolls of special film requiring photographic darkrooms. Loads and unloads in daylight — anywhere.

150 Photos Per Hour — Anyone, after becoming familiar with the equipment, can photograph up to 150 persons per hour with this simple unit.

Portable — Compact — Camera, lights, numbering device and focusing arm are removable—fit inside metal cabinet occupying 15" x 15" floor space.

Inexpensive To Operate — Uses standard 16-exposure roll film — available anywhere. Any drug store can develop and print for about 2¢ per print.

A Complete Unit — Includes cabinet, numbering device, interchangeable numbers, camera and 2 flood lights, as illustrated, for only $125.00 F.O.B. Akron.

IMMEDIATE DELIVERY from stock. -exposure units can be supplied or special units built to dez. Mail your order today.

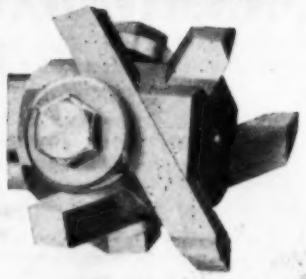
PECIAL OR STOCK BADGES ALSO AVAILABLE

CHARLES MAYER STUDIOS
AMERA IDENTIFICATION EQUIPMENT MANUFACTURERS
BOWERY AT CENTER STREET
AKRON, OHIO

▲ Mention Item NED-3993 when writing ▲

a totally different kind of surface facer

IMPOSSIBLE? You bet not! Every claim made for this tool can be proved!



1 Replaces End, Shell, Slab Mills, and Inserted Tooth Cutters;
2 Fits all vertical and horizontal milling machines, drill presses and other spindle machines;
3 Quickly and accurately adjustable, just four tool sizes cover all fractional diameters from 1⅛" to 5";
4 Slashes tool costs up to 75%;
5 Clark tool blades are not ruined by hard spots in castings, re-extruded Dural, etc.—bits may be quickly touched up and sharpened free hand;
6 Tool blade life is unusually long, replacement cost low;
7 Cuts any material under the most severe operating conditions accurately, swiftly, economically;
8 Ample blade clearance avoids chip clogging and resultant slow-downs;
9 Tools available with all types of blades, including carbide tips;
10 Prompt delivery on suitable priority.

CALL YOUR JOBBER TODAY
WRITE FOR BULLETIN NO. NED-8

CLARK ADJUSTABLE
FACING TOOL

GET THE FACTS about Clark Adjustable Hole & Fly Cutters — they, too, are remarkable new-type tools!

Canadian Distributor: DOMINION BEARINGS, LTD. • Toronto • Montreal • Winnepeg

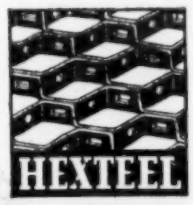
Robert H. Clark Company
3424 SUNSET BLVD. • LOS ANGELES 26
MANUFACTURERS: PRECISION TOOLS, PRECISION PARTS

▲ Mention Item NED-3996 when writing ▲

Your Industrial Army Marches MOST SECURELY on

KLEMP HEXTEEL
HEAVY DUTY SURFACE ARMOR

Heavy duty steel grid imbedded in concrete or mastic, over old or new wooden or concrete floors. Makes solid one-piece rigid, smooth and seamless mat over entire area. Steel bearing surface for truck wheels.



Solidly linked steel mesh, 12 and 14-inch gauge, ¾" to 1¼" deep. Easily laid.

Use also for economical repairing of old floors, any kind. Banish ruts, cracks and potholes.

SEND FOR COMPLETE CATALOG

Hexteel, Floorsteel, Gratings, Stair Treads, Steel Safety Mats. Write

WM. F. KLEMP COMPANY
"Steel Flooring Specialists"
6607 S. Melvina Ave. Chicago 38, Illinois

▲ Mention Item NED-3999 when writing ▲

FOR PROTECTION of *ELECTRONIC* TUBES

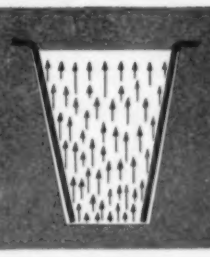
Equip Circuits with Automatic Timers

With costly tubes now practically irreplaceable, guarding them against damage is a patriotic duty. Circuits equipped with Industrial Timers can dispense with the human element. The correct interval in the application of voltage to plates is controlled automatically. In the event of power failure the Industrial Timer automatically resets. Thus plate circuit is protected against the sudden restoration of power. Write for descriptive bulletins.

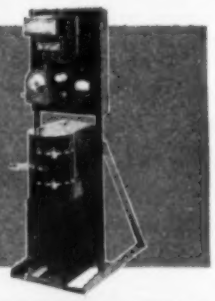
INDUSTRIAL TIMER CORPORATION
119 Edison Place Newark, New Jersey

▲ Mention Item NED-4000 when writing ▲

This Simple Principle of Design

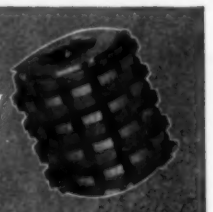


Plus this Fool-Proof Heat Control



Guarantees that this Upton Electric Salt Bath Furnace

Will Harden this Hob so Accurately and Uniformly that it Will Not Require Finish Grinding!



Inexperienced help can use the Upton Heat Measuring Control and get perfect results, all the time.

Moly steels are easily handled. Predictable size change is so exact that finish grinding is entirely eliminated on many tools.

Ask for complete information now.

Upton ELECTRIC FURNACE DIV.

Upton Electric Salt Bath Furnaces are available for all types of heat treating from 300° to 2500° F.

7439 MELVILLE AT GREEN DETROIT, MICHIGAN

▲ Mention Item NED-4001 when writing ▲

VERTICAL COOLANT PUMP

Capable of handling soluble coolants containing grit and abrasives without injury to its mechanism, this Model TL gusher coolant pump is designed for deep immersion. Integral mounting flange provides for bolting directly to reservoir cover or bedplate of machine. This makes possible simplified installation in comparatively deep reservoir which may be located below floor level.

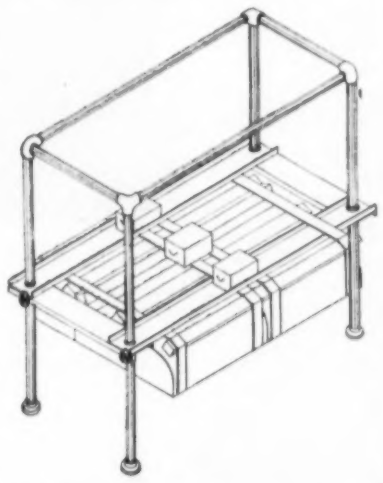
No packing glands or friction seals are used, nor are there any bearings or metal contacts below mounting flange. One ball bearing is mounted in upper motor end bell and another within mounting flange housing which provides ample support to maintain rigidity in heavy extension. Weight and thrust of shaft is taken by lower ball bearing which is locked into position.

Pump is available in 23⅝ and 19⅝-inch lengths from mounting flange to bottom of pump. It is equipped with ½ horsepower totally enclosed motor for continuous duty and ¾ horsepower motor for heavy duty applications. Made by **The Ruthman Machinery Co.**, 1810 Reading Rd., Cincinnati, Ohio.

▲ Mention Item **NED-4002** when writing ▲

FOUNDRY MOLD DRIER

Skin-drying of green sand molds is accomplished readily with this Model FSP 690 Radicon infra-red drier. Molds ranging up to 46 by 36 by 36 inches can be handled. Two drying units may be placed together, as shown, to accommodate molds measuring 70 by 46 by 36 inches. Machine is completely portable and can be used at any convenient location in foundry. It may be carried by two men.

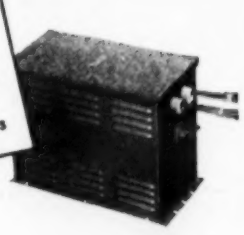


Claimed advantages of skin-drying green sand molds with infra-red include elimination or reduction of blowholes, minimum time required to dry mold, reduced drying costs and conservation of floor space. Heater assembly consisting of six sections may be raised or lowered as required. Each heater section is equipped with four 250-watt R-40 type infra-red lamps. Unit may be plugged into any standard 110-volt power circuit. Made by **Infra-Red Engineers, Inc.**, 812 Huron Rd., Cleveland, Ohio.

▲ Mention Item **NED-4003** when writing ▲

Here's a VOLTAGE STABILIZER that's INSENSITIVE to load power factor

A FEW OF ITS MANY APPLICATIONS
- Electronic-tube apparatus
- Motion-picture sound equipment
- Motion-picture projectors
- Laboratory precision processes and testing equipment
- Calibration of meters, instruments, and relays



Provides a constant 115-volt output from 95- to 130-volt circuits, ensuring better performance and greater reliability of a wide variety of electric equipment. Applicable wherever close voltage regulation is requisite to good operation.

Not affected by variations in load from no load to full load, or changes in power factor from unity to 0.8 lagging.

Completely automatic. No moving parts, no adjustments, no maintenance.

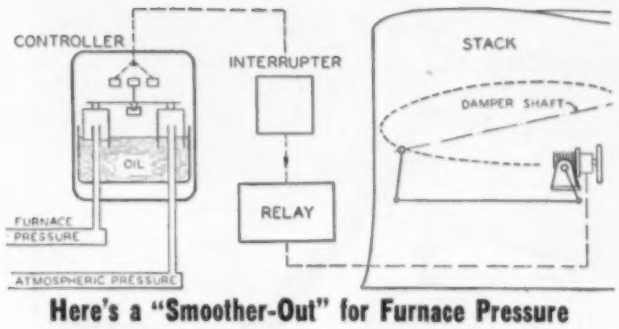
Wide range of ratings. From 50 to 5000 va. "Specials" on request.

For details, write for Bulletin GEA-3634. *General Electric, Schenectady, N. Y.*

GENERAL ELECTRIC

▲ Mention Item NED-4004 when writing ▲

← Set this Controller
And this Drive Unit → regulates the damper to carry out your orders.



Here's a "Smoother-Out" for Furnace Pressure

The equipment shown above is installed in a steel mill, and the Drive Unit employed is one of our larger sizes. Other units for torques from 25 lb ft up to 1000 lb ft are available. Open-hearth furnaces, soaking pits, slab and cake furnaces, cement and other rotary kilns, glass tanks and skelp furnaces in scores of plants are using L&N Furnace Pressure Controllers with excellent results.

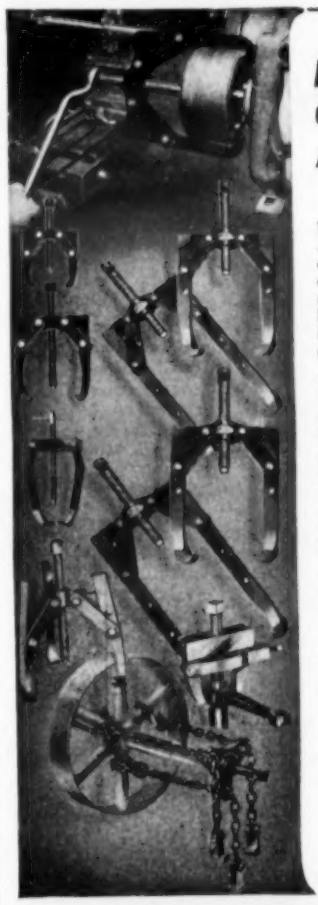
LEEDS & NORTHRUP COMPANY, 4905 STENTON AVE., PHILA., PA.

LEEDS & NORTHRUP

MEASURING INSTRUMENTS · TELEMETERS · AUTOMATIC CONTROLS · HEAT-TREATING FURNACES

Jrl Ad No. A-600 (1a)

▲ Mention Item NED-4005 when writing ▲



ARMSTRONG-BRAY GEAR & WHEEL PULLERS

Essential Tools . . . Prompt Delivery

Today wheels must keep turning . . . shut-downs for repairs and change-overs must be brief, and a good wheel puller is essential to save valuable man and machine-hours and prevent breakage of irreplaceable wheels, pulleys and gears.

ARMSTRONG-BRAY GEAR AND WHEEL PULLERS come in types and sizes for all industrial applications.

STEELGRIP Standard Rigid Arm Pullers are of improved design. Will not slip from work. Arms are forged and heat-treated. 2-arm, 3-arm and special designs. 11 types.

CHAINGRIP Universal Pullers pull spoked wheels, solid gears, pinions, etc., even though they are a considerable distance from end of shaft. Proof tested chains have chain hook on one end, and special pulley hook on other. Furnished in 2 sizes.

Write for Catalog today. Be ready for emergencies—to keep wheels turning.

ARMSTRONG-BRAY & CO.
"The Belt Lacing People"
5336 Northwest Highway
Chicago, U. S. A.

▲ Mention Item NED-4006 when writing ▲

Gatke

High-Heat-Resisting Asbestos

BRAKE BLOCKS
CLUTCH FACINGS
FRICTIONS

Made for ALL Requirements

Engineered to do the job RIGHT

Just tell us What You Need!

Gatke Brake Blocks and Frictions are made in all shapes and sizes to machined accuracy.

Gatke Clutch Facings — Made in Disc, Gear-Toothed and Cone Types for all applications—Large or Small.

Gatke Heavy Duty Woven Brake Lining

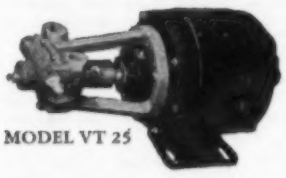
Dura-Blok Wire-Back Moulded Brake Lining

GATKE CORPORATION
220 N. LaSalle St. Chicago

▲ Mention Item NED-4007 when writing ▲

▲ Mention Item NED-4008 when writing ▲

EASTERN *Midget* PUMPS FOR *Giant* PERFORMANCE!



MODEL VT 25

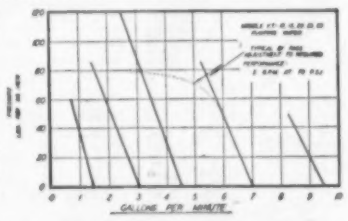
● Positive pressure pumps are self-priming and designed for high pressures. Will handle non-corrosive liquids not containing abrasives. May be equipped with built-in by-pass.

Specifications for Models of VT series illustrated:
Size: From 10½" x 5" x 5" to 17½" x 7¾" x 7⅞"
Power: Up to ½ H. P. Heavy duty induction or D. C. Compound wound motors are available in all enclosures.

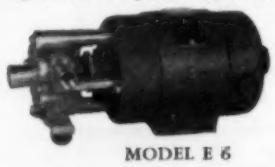
Alloys: Pumps are standard in bronze or cast iron.

Weights: 15 lbs. to approximately 50 lbs.

Voltages: Available with almost all current characteristics.



● Centrifugal pumps are designed for low pressures and for continuous duty over long periods. Compactness and super performance in relation to size make them "tops" where space and portability are factors.



MODEL E 6

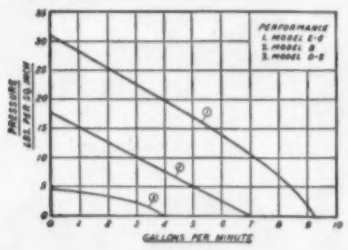
Specifications for Model E6 illustrated: Size: 7¾" x 4" x 4"

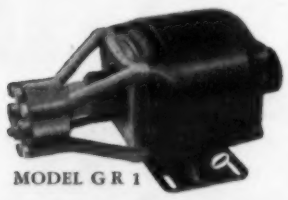
Weight: 7½ lbs.

Power: 1/10 H.P.

Voltages: 115 or 230 volt universal motors.

Alloys: Bronze, monel, stainless steel, Hastelloy C and cast iron.





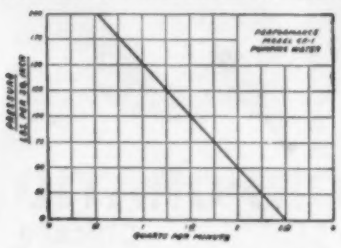
MODEL G R 1

● Eastern gear pumps are designed for dependable flow at high pressures. A rugged, dependable new type of Eastern pump designed with close clearances.

Specifications for Model G R 1 illustrated:

Size: 11" x 5" x 5¼". Weight: 20 lbs. Power: ⅛ H. P.
Voltage: Available with almost all current characteristics.
Alloys: Bronze or cast iron with bronze or steel gears.

Write for booklet of standard pumps. Eastern also designs and builds small pumps for special applications.



EASTERN
ENGINEERING CO.
47 FOX STREET
NEW HAVEN, CONN.

▲ Mention Item NED-4009 when writing ▲

GRINDING WHEEL DRESSER

Utilizing hard characteristics of natural uncut diamond, this dressing tool for thread grinding wheels is of shape which permits not only straight dressing, but angle, radial and

multiple form dressing as well. Because tool produces clean cuts, forms are obtained quickly and held longer, it is claimed. Tool is made and reserviced on production basis which assures quick deliveries. Production was increased from 8 units per machine to 80 units per machine per day on recent tests, according to manufacturer. Tool is designed for dressing wheels that grind Whitworth, Buttress, Acme or any other standard thread. Made by **Wheel Trueing Tool Co.**, 3200 W. Davison, Detroit, Mich.

▲ Mention Item NED-4010 when writing ▲

POWDER CHARGE TESTER

Powder charges may be electronically checked for ballistic factors through use of this Type 235 cathode-ray oscillograph. Powder sample is exploded in strong sealed container. Electric voltages obtained from this confined explosion are applied to horizontal and vertical plate pairs of cathode-ray tube through suitable amplifiers. Simultaneous deflection in perpendicular directions causes tube beam to move in path which plots graph on fluorescent screen. This graph is photographically recorded and analyzed. Screen of cathode-ray tube provides qualitative indication and allows accuracy within one-half per cent. Oscillograph made by **Allen B. Dumont Laboratories, Inc.**, 2 Main Ave., Passaic, N. J.

▲ Mention Item NED-4011 when writing ▲

DO YOU KNOW?

Operating equally well in Arctic weather at 40 degrees below zero and in tropical heat of 174 degrees Fahr., plastic right angle, two-cell, prefocussed flashlight has locking-flashing switch, carrying clip and extra bulb in bottom cup. Produced by four companies for armed forces, flashlights have molded case of Lumarith EC which is made by Celanese Celluloid Corp., 180 Madison Ave., New York, N. Y.

▲ Mention Item NED-4012 when writing ▲

Stanzoils
keep hands safer
from all causes of dermatitis

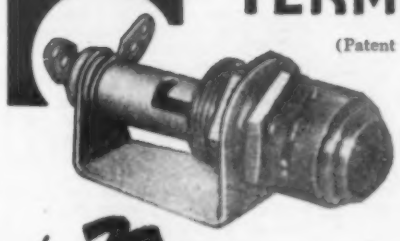
● Not only must hands of your workers be protected from harmful effects of contact with oils, acids, caustics but in many cases from dermatitis caused by skin sensitivity to rubber gloves. Stanzoils of neoprene do not cause skin irritations and they provide greater safety from attack by industrial materials because neoprene resists damage by them, often lasting 3 to 7 times as long as rubber gloves. Stanzoil protection costs you less, prevents avoidable accidents and costly injury claims. All standard styles and sizes—write today for current delivery data.

STANZOIL PIONEER

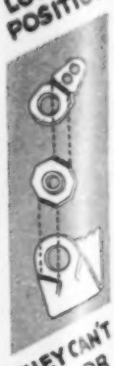
Synthetic Rubber Division
THE PIONEER RUBBER COMPANY
248 Tiffin Rd., Willard, Ohio, U.S.A.
New York • Los Angeles
MADE WITH DU PONT NEOPRENE

▲ Mention Item NED-4013 when writing ▲

Now RIGID TERMINALS
(Patent Pending)



THEY ARE LOCKED IN POSITION



THEY CAN'T TURN OR SHORT

by New...
GOTHARD PROCESS

Again Gothard pioneers in Pilot Light design and construction by providing vibration and turn proof terminals. Terminals on all Gothard Pilot Lights are rigidly fastened in place and cannot loosen or turn to cause shorts. This is only one of the many individual features that have resulted from Gothard's careful study of field requirements. Gothard Pilot Lights are available in a wide range of sizes and styles, all of which are illustrated and fully described in the Gothard Pilot Light Assemblies Catalog.

Request your copy without obligation.

Gothard MANUFACTURING COMPANY
1380 N. NINTH ST., SPRINGFIELD, ILL.

▲ Mention Item NED-4014 when writing ▲

Peerless MARINE TYPE MOTORS
AC & DC

PEERLESS motors for marine service are manufactured in AC and DC up to 3 horsepower. Frames are cast iron or of all-steel construction (no cast iron or aluminum parts).

Also DC generators and motor generator sets consisting of DC generators with either AC or DC driving motors.

Peerless DC marine type motor for close coupled direct connected pumps, ½ to 3 h. p.

Peerless fractional h. p. DC marine type drip-proof motor.

THE *Peerless* ELECTRIC COMPANY
WARREN, OHIO
1893 ★ GOLDEN JUBILEE YEAR ★ 1943

▲ Mention Item NED-4015 when writing ▲

THE MASTER ELECTRIC COMPANY
INDUSTRIAL EQUIPMENT DIV. — DAYTON, O.

▲ Mention Item NED-4016 when writing ▲

HAND TRUCK

for . . .
BULK Materials
SMALL PARTS
SCRAP

More convenient to handle, and with greater capacity than a wheelbarrow, this new 12-gage metal, leakproof hand truck was originally designed for a large defense plant . . . NOW AVAILABLE FOR GENERAL USE. . . Sizes: 25¾" x 45" top; 25¾" x 27" bottom; 17½" deep; weighs 125 lbs. . . . Perfectly balanced for unloading . . . equipped with two 8" semi-steel wheels and two 4" ballbearing swivel casters . . . $46.50, F.O.B. Detroit . . . Special sizes and construction to meet individual requirements.

— ALL-WOOD FLOOR MAT —

Water and Oil Resistant . . .
Reduces Fatigue
Priority Free

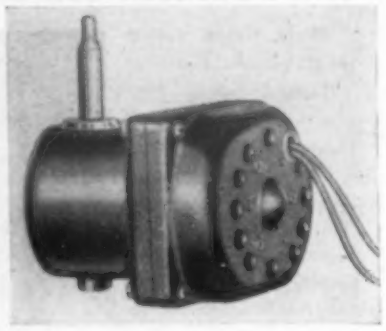
No priority is required for this mat that is better than rubber under many conditions—unaffected by oil, does not creep, has ample openings to receive chips, and is readily cleaned . . . Stock sizes: 18" x 28"; 18" x 29"; 24" x 51"; and 24" x 75"—all mats 1 1/16" thick. Special sizes to order. Constructed of soft wood blocks hinged and held together by hardwood dowels—all edges are rounded.

Place your order today, or let us send you further information

FISHER EQUIPMENT COMPANY
6315 ELLSWORTH AVE. DETROIT, MICH.

▲ Mention Item NED-4017 when writing ▲

SMALL ELECTRIC MOTOR



Maintaining constant speed regulation under wide variations of voltage, load and temperature, Rotom self-starting motor measures only 4⅜ x 3⅛ x 3¼ inches. Motor is available for operation on 110 or 220-volt, 50 or 60-cycle source at 14 watts input.

Gears are of helical cut laminated bakelite for quiet operation and are completely enclosed and protected. Forced ventilation assures cool operation. Motor has large bearings and ample oil reserves, and is precision assembled for uniform production. Shipping weight is 5½ pounds. Made by **Rotom Mfg. Co.**, Alhambra, Calif.

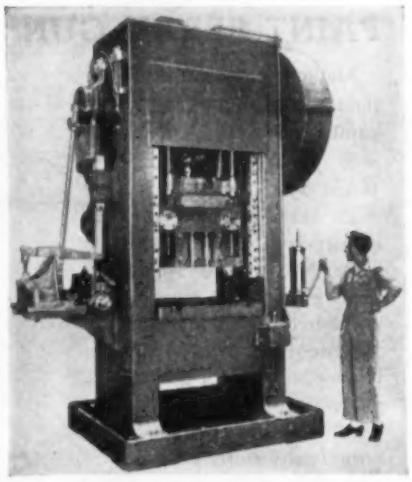
▲ Mention Item NED-4020 when writing ▲

FLUORESCENT BALLAST

Balancing of light output and power consumption of two fluorescent lamps, 90 degrees out of phase is accomplished with this Model 240 B Streamliner ballast. Weighing less than two pounds, this unit is compact and easily installed in fixture channel. Design of inductance reduces stroboscopic effect to eliminate eye strain and provide better overall lighting. Made by **Superior Electrical Industries**, Dept. Q, 2614 W. North Ave., Chicago, Ill.

▲ Mention Item NED-4021 when writing ▲

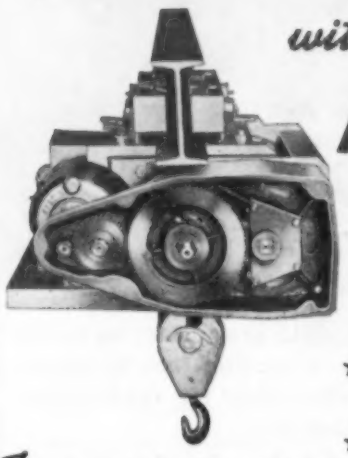
CENTRALIZED LUBRICATION



Complete centralized lubricating systems do not require previous skill or experience for operation. Employment of women oilers on industrial machines is feasible. Centralized system supplies large number of bearings from single pressure pump. It is claimed to be possible to lubricate ten times as many machines fitted with centralized systems as can be handled by manual oiling. Lubrication equipment made by **Farval Corp.**, 3249 E. 80th St., Cleveland 4, Ohio.

▲ Mention Item NED-4022 when writing ▲

Speed Your War Work with R & M ALL-STEEL HOISTS!



CHECK THESE FEATURES:

★ **PRECISION-BUILT** of steel from track to hook.

★ **COMPACT**—provides utmost plant headroom.

★ **ACCESSIBLE**—hoisting mechanism easily removed.

★ **R & M POWERED**—for trouble-free performance.

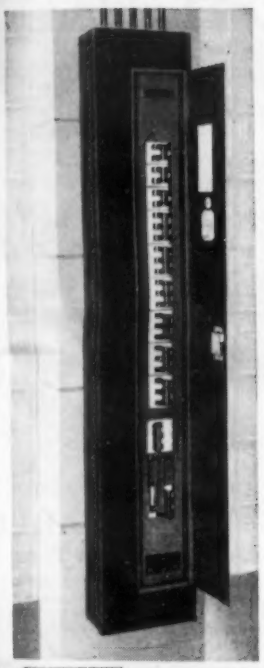
These superior features are just a few of the reasons why production engineers in war plants everywhere are selecting R & M All-Steel Hoists. Get the *whole* story on how R & M equipment—ranging in capacity from ½-ton to 7½-tons—can handle *your* materials faster, better and more economically!

Write for complete details—Folders No. 800 and 801-NED

ROBBINS & MYERS, INC.
HOIST & CRANE DIVISION, SPRINGFIELD, OHIO

▲ Mention Item NED-4024 when writing ▲

where Space is Limited



SQUARE D Column-type PANELBOARDS

Mounting space for electric lighting and power distribution panelboards in modern industrial plants is often limited to H-beams, supporting pillars or narrow wall separations between windows. These are ideal applications for Square D streamlined column-type panelboards.

These panelboards are narrow—as little as 7¼" width in the Multi-breaker (Type NMM) lighting panelboards. They will fit into spaces which cannot accommodate standard type panels. Available with circuit breakers, Multi-breaker branches, or with fusible circuits—plug or cartridge. All of them carry the Underwriters' approval. Write for Bulletins.

at left: **Multi-breaker Distribution Panel** Type MH—230 Volts A. C. (or less), 1, 2 and 3 pole branches, 15-100 amp.

ELECTRICAL EQUIPMENT • KOLLSMAN AIRCRAFT INSTRUMENTS

SQUARE D COMPANY

DETROIT • MILWAUKEE • LOS ANGELES

▲ Mention Item NED-4018 when writing ▲

CLARK TRUCTRACTOR
DIVISION OF CLARK EQUIPMENT COMPANY
BATTLE CREEK, MICHIGAN, U.S.A.

▲ Mention Item NED-4019 when writing ▲

SLICING ARMOR PLATE AS EASILY AS BREAD!

Armor plate for tanks and ships must be precision cut at many places to insure contact for welding. Because of the steel's toughness, ordinary cutting methods won't do. But with Carborundum Brand Cutting-Off Wheels, the thick armor plate is sliced as easily as you'd slice a loaf of bread. And with precision too.

Abrasive wheels have revolutionized cutting-off methods. Their speed and precision have made possible many a "shortcut" in war production. Like other abrasive tools these cutting-off wheels are "Weapons for Production." Please use them wisely and they'll serve you better.

CARBORUNDUM
ABRASIVE PRODUCTS

Sales Offices and Warehouses in New York, Chicago, Philadelphia, Detroit, Cleveland, Boston, Pittsburgh, Cincinnati, Grand Rapids
(Carborundum is a registered trade-mark of and indicates manufacture by The Carborundum Company)

THE CARBORUNDUM COMPANY, NIAGARA FALLS, N. Y.

▲ Mention Item NED-4023 when writing ▲

FOR VICTORY BUY UNITED STATES WAR BONDS AND STAMPS

For special heads, threads, finishes, etc. — on fastenings of any metal or alloy adapted to cold-upset—depend on Progressive. 25,000,000 is our weekly output; customer satisfaction our daily achievement.

The PROGRESSIVE MFG. CO.
TORRINGTON • CONNECTICUT

▲ Mention Item NED-4025 when writing ▲

THIS MAY LOOK FUNNY — But It's MIGHTY SERIOUS!

Mechlins are trouble makers for men who handle wrenches. Shown at the right is just one of 'em — he is "SPECIALITUS" who provokes a mania for making special tools for every odd job, whether necessary or not. Blackhawk's completely interchangeable socket wrenches help put this guy and his fellow Mechlins out of business. Exclusive features make Blackhawk Socket Wrenches the modern answer to many complicated assembly, service and maintenance problems.

Meet the "MECHLINS"

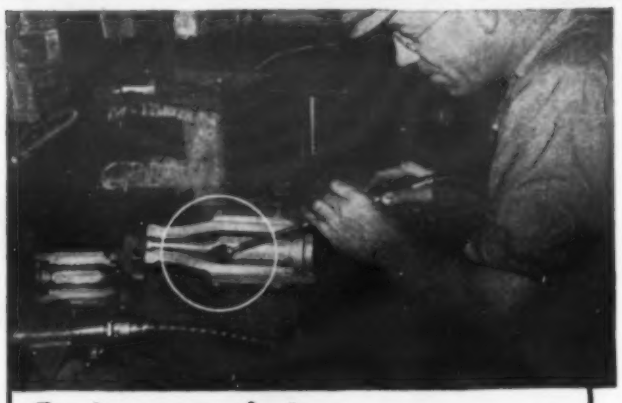
This interesting and helpful new booklet tells you how to lick the troublesome Mechlins. Mail the coupon TODAY!

BLACKHAWK

BLACKHAWK MFG. CO., Dept. W1383, Milwaukee 1, Wis.
Rush your free booklet "MEET THE MECHLINS"

Name.....
Company.....
Address.....

▲ Mention Item NED-4026 when writing ▲



Far too many plants are still trying to do pokey, difficult little sanding jobs by hand. Such jobs are tailor-made for ready-made Metalite Cloth "Gadgets."

Smooth running, jointless Spirabands, tapered Spirapoints, Pencils and edge-slotted Discs, on your high-speed tools, will do them in seconds instead of minutes and make play of many time-wasting finishing tasks.

You select the job and let us lick it. Just drop a postal to . . .

RELIABLE COATED ABRASIVES SINCE 1872

BEHR-MANNING (DIVISION OF NORTON COMPANY) TROY, N.Y.

▲ Mention Item NED-4027 when writing ▲

Prompt Deliveries of

ACCURATE Sheet Metal Work

SPARE PART BOXES

under Government Specifications

Carefully and rapidly produced in Stackbin's modern plant, Stackbin-made spare parts boxes are meeting Navy requirements and are in use on Navy ships.

Stackbin offers you unusual facilities to fabricate these boxes and other sheet metal products

Behind these special products stand the designing experience and production facilities of a leading maker of parts and materials handling equipment. You can take advantage of their knowledge of sheet metal fabrication. Write Stackbin Corp., 71 Troy St., Providence, R. I., to find out what they can do for you.

STACKBIN SYSTEM

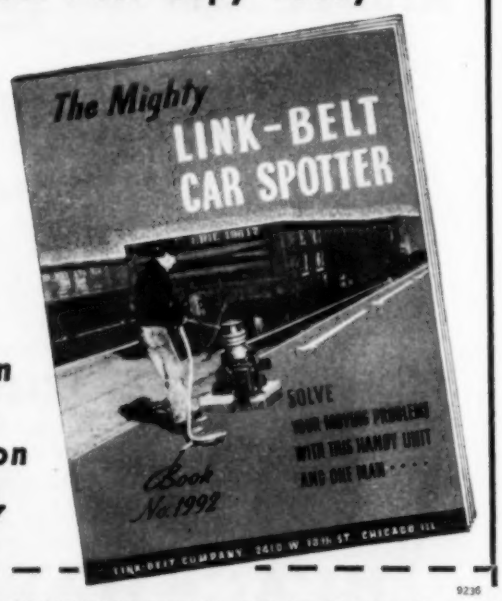
"Stacked and Still Accessible"

STACKBIN CORP., Providence, R. I.

▲ Mention Item NED-4028 when writing ▲

JUST OFF THE PRESS!

Get Your Copy Today



Return This Coupon

9236

LINK-BELT COMPANY, 2410 W. 18th St., Chicago, Ill.
Send copy of Link-Belt Car Spotter Book No. 1992.

Name _____ Firm _____

Address _____

City _____ State _____

▲ Mention Item NED-4029 when writing ▲

INDUSTRIAL SAFETY GOGGLE

Made almost entirely of plastic, Eyesaver industrial safety goggles have lenses of Plexiglas. This material is crystal clear, non-distorting and will not shatter or splinter. Goggle fits directly over prescription glasses and full frame affords added protection against eye injury from sides, top and bottom.

Frame is reinforced with metal clip at bridge. Weighing only 1¾ ounces, goggles are comfortable. Snap-in type filters are available for torch welding and cutting or for protection against other glares. Made by **Watchemoket Optical Co.**, Providence, R. I.

▲ Mention Item NED-4030 when writing ▲

LIFTING MAGNETS

Developed for loading, unloading and moving of large quantities of material quickly and at low cost, circular lifting magnets are available in seven sizes. Ratings range from 2.3 to 58 amperes at 230 volts and lifting capacities from 450 to 8900 pounds. Features include renewable pole shoes of selected alloy steel, ribbed coil shield, unicoil construction, leads and terminals fully protected against damage and shock, adequate heat dissipation and windings vacuum impregnated to eliminate possibility of electrical trouble. Made by **Stearns Magnetic Mfg. Co.**, 653 S. Twenty-eighth St., Milwaukee, Wis.

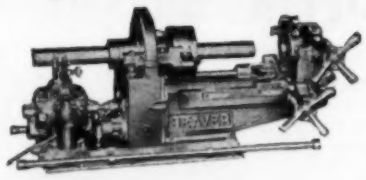
▲ Mention Item NED-4031 when writing ▲

PAINT SPRAY GUN

Made of non-critical materials, this Thor No. 7 paint spray gun is available for quick delivery. While not possessing elaborate finish and aluminum construction employed in Thor No. 7 and No. 2 spray gun models, this tool is offered as dependable substitute for either model. It may be used for general purpose spray painting operations and will perform as efficiently as former models. List price is $28.00. Made by **Binks Manufacturing Co.**, Dept. NED, 3124 Carroll Ave., Chicago, 12, Ill.

▲ Mention Item NED-4032 when writing ▲

The A-B-C of Pipe and Bolt Machines!

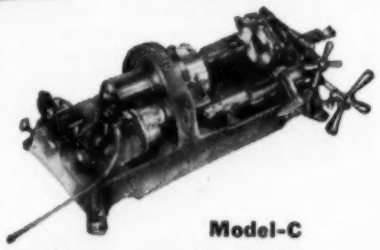


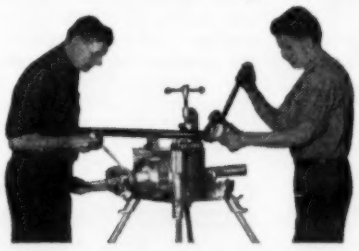
Model-A

A high-speed heavy-duty deluxe Pipe and Bolt Machine. Range ⅛ to 2-inch —up to 12-inch with geared tools and drive shafts. Bolts, ¼ to 2-inch. Wt. 415 lbs. Ask for Bulletin-A.

Model-B

A compact utility Pipe and Bolt Machine combining many features of Model-A with the easy portability of Model-C. Range ⅛ to 2-inch — up to 8-inch with drive shaft and geared tools. Bolts up to 1½-inch. Weight 280 lbs. Ask for Bulletin B.





Model-C

A sturdy little Power Unit

Converts Hand Pipe Tools into Power Tools from ⅛ to 8-inches. Threads 8-inch in 6 minutes. Threads bolts up to 1½-inch. Equipped with automatic chuck wrench ejector — a safety feature. Two men can use it at the same time without interference. Easily portable—weighs about 150 lbs. Write for Bulletin-C.

Also a Complete Line of Hand Tools!

BEAVER PIPE TOOLS

843 HENRY AVE. WARREN, OHIO

▲ Mention Item NED-4033 when writing ▲

RODNEY HUNT

Super-Strong ROLLS

WOOD, METAL, RUBBER, PLASTIC

Specializing in rolls for 50 years, Rodney Hunt today makes use of new materials and applies patented features of design and construction which make rolls super-strong. Textile, paper and many other industries have ended roll troubles and cut roll costs by standardizing on "Rodney Hunt". Write for Catalog No. 740.

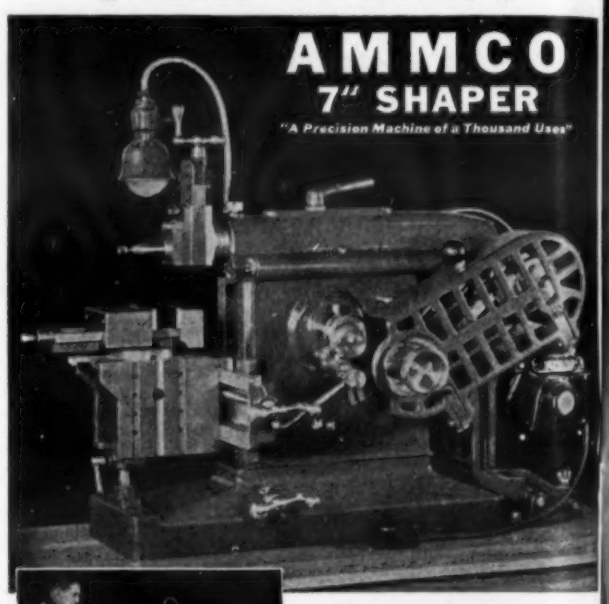
RODNEY HUNT MACHINE COMPANY

73 MAPLE STREET ORANGE, MASS., U. S. A.

▲ Mention Item NED-4034 when writing ▲

AMMCO 7" SHAPER

"A Precision Machine of a Thousand Uses"



IT'S PORTABLE

-- Saves Steps and Time --

Don't tie up a big shaper when so many jobs can be done just as accurately and much quicker and more economically on the AMMCO 7" PRECISION SHAPER.

Available for stationary installation or mounted on portable cabinet easily rolled to the mechanic's workbench . . . Write today for specifications and prices.

AUTOMOTIVE MAINTENANCE MACHINERY CO.

2110 Commonwealth Avenue North Chicago, Ill.

▲ Mention Item NED-4035 when writing ▲

Do your GEARS work for PROFITS

SPEED PRODUCTION?

Make sure of continuous performance, highest sustained efficiency per train, with the precision cutting of

Abart GEARS

Improve your equipment and machines with the dependable gears long proved by Abart customers. Any material, spur, bevel, worm, helical, internal, small and large. No stocks. Send B/P or specifications for estimate.

ABART SPEED REDUCERS:

Over 75 types and sizes. Send for complete Speed Reducer Catalog. Wire or write

Abart GEAR AND MACHINE CO.

MANUFACTURERS OF Speed Reducers & Gears

4822 WEST 16th ST. CHICAGO, ILLINOIS

▲ Mention Item NED-4036 when writing ▲

Fence him off with FACTS·IN·FIGURES

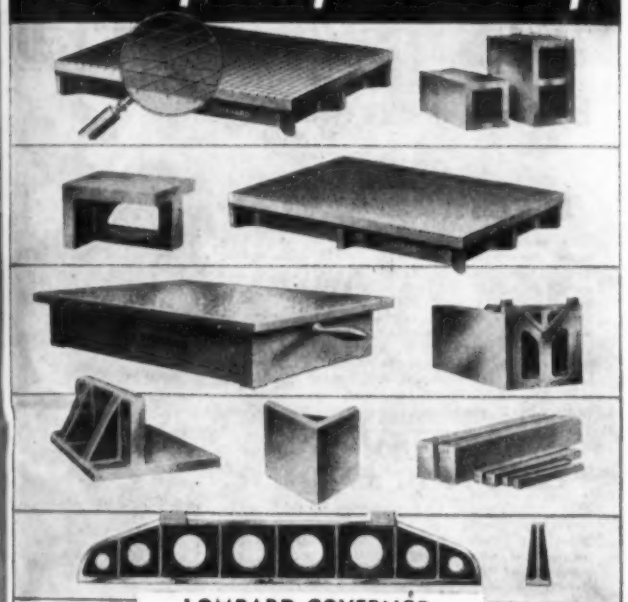
There's not any room, today, for bugs in war production. Not even for the simple, routine bugs that only call for quick machine-adjustments. And particularly not for the japanese beetles and german plant lice of deliberate sabotage.

But there's room...*in fact, there's a definite place*...on every production machine for a Veeder-Root Counting Device that will put the finger on all kinds of bugs, as soon as they show themselves, and keep them from working into the danger zone. It's easy, quick, and inexpensive to give machines this protection . . . without disturbing schedules.

VEEDER-ROOT Incorporated
HARTFORD, CONN.

▲ Mention Item NED-4037 when writing ▲

For Speedy Delivery



LOMBARD GOVERNOR

for precision production work — is making accurate and specially treated Angle Plates, Scraped V Blocks, Lapping Plates, True Surface Plates, Bench Plates, Parallels and Straight Edges. Making these essential inspection parts requires an engineering knowledge which is available to you for your special plate problems.

20 Sizes - 14" x 18" to 48" x 96"

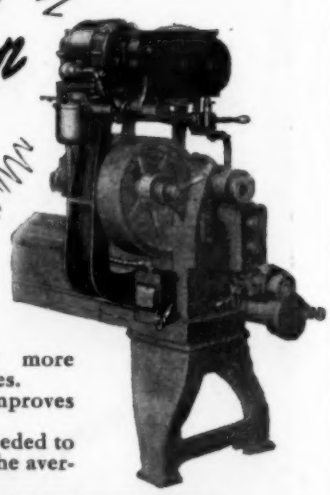
Send us your drawings and we'll be glad to quote.

LOMBARD GOVERNOR CORPORATION
150 MAIN ST., ASHLAND, MASS., U. S. A.

▲ Mention Item NED-4038 when writing ▲

CULLMAN MACHINE DRIVES

increase production



Modernizing over-head drive equipment with Cullman Machine Drives permits a better utilization of shop space and provides more efficient operation of machines.

At the same time it vastly improves working conditions.

Only four bolt holes are needed to attach the Cullman Drive to the average lathe.

CULLMAN WHEEL CO.
1333 Altgeld Street, Chicago

▲ Mention Item NED-4039 when writing ▲

FIRE PROTECTION PUMP

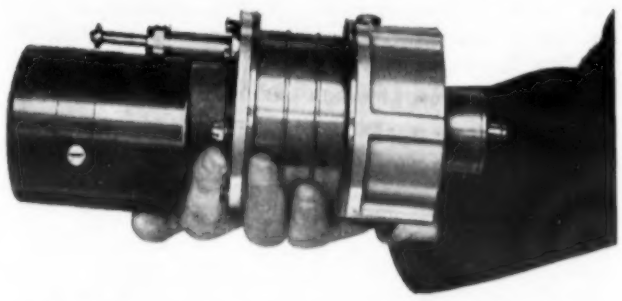
Having greater capacity than common stirrup pump, this hand operated auxiliary fire protection pump is designed for plant fire protection service. Pump may be installed on drums or barrels of water placed at strategic locations on roof or around plant. Ordinary garden hose fitted with adjustable nozzle may be attached to pump.

These units are self-priming and capacities range from 7 to 25 gallons per minute. Sufficient pressure is developed to produce 25 to 30 foot stream of water. Made by **Blackmer Pump Co.**, 1976 Century Ave., Grand Rapids 9, Mich.

▲ Mention Item NED-4040 when writing ▲

VARIABLE SPEED DRIVE

Extremely accurate, low power variable speed is provided by this Model 15 drive which weighs only eight pounds complete with motor. Unit is intended for use in "flea power"



range and is applied to motors of less than 1/15-horsepower. Standard ball bearings are used throughout. Units have torque ranges from 4 inch-pounds at maximum speed forward with 3600 revolutions per minute input to 8 inch-pounds in reverse; or from 1 inch-pound at maximum forward speed with 1800 revolutions per minute input to 2 inch-pounds in reverse.

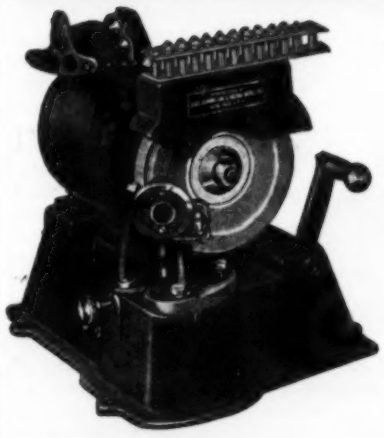
Output speed is available from 700 to zero revolutions per minute, or if it is desired to reverse output shaft without reversing motor, range may be from 400 revolutions per minute forward to 400 revolutions per minute reverse. Instantaneous and shockless reversal is feature of this drive. High speed parts connected to motor continue to run at constant speed at all times.

Unit is adaptable to various controls, such as manual by hand wheel with speed indicating dial located on either side, lever control or special control to suit individual application. Speed adjustment is sharp and accurate and speed is held at any setting without cyclic variation. Drive returns to preset speed with negligible error.

Present production is limited to special war applications. Unit is available for installations of this character. Made by **Graham Transmissions, Inc.**, 2706 N. Teutonia Ave., Milwaukee 6, Wis

▲ Mention Item NED-4041 when writing ▲

BLACK DIAMOND
• PRECISION DRILL GRINDERS •



YES—ANY UNSKILLED WORKER CAN KEEP SMALL DRILLS SHARP

SAWS BLACK DIAMOND TOOLS

WHY pay skilled machinists for grinding small drills when any unskilled worker can operate this machine and keep all drills properly ground with uniform lips, at the proper angle and with correct clearance for fast cutting.

Black Diamond grinding insures precision drilling, reduces drill breakage, saves expensive drill stock, cuts drilling costs to the bone.

Moderately priced, a Black Diamond Grinder will actually pay for itself in savings, in a few months, wherever small drills are used. Write for new bulletin today.

BLACK DIAMOND SAW & MACHINE WORKS, INC.
NATICK, MASSACHUSETTS

▲ Mention Item NED-4042 when writing ▲

WEDGE makes All Types of PROTECTORS

Split Feature Patented

We make a complete line of Closing Plugs, Pipe Protectors, Plain End, and Thread Protectors. WEDGE can develop for you a protector to meet your specific requirements. Protects threads on valuable parts while in storage, handling or shipping.

WELD Pipe Use WEDGE Split CHILL RINGS for REINFORCED JOINTS

By using WEDGE Chill Rings with the patented SPLIT Feature, you get stronger, REINFORCED joints that will withstand shock, strain, or vibration—in fact, the pipe will fail before the reinforced joints. It will pay to investigate.

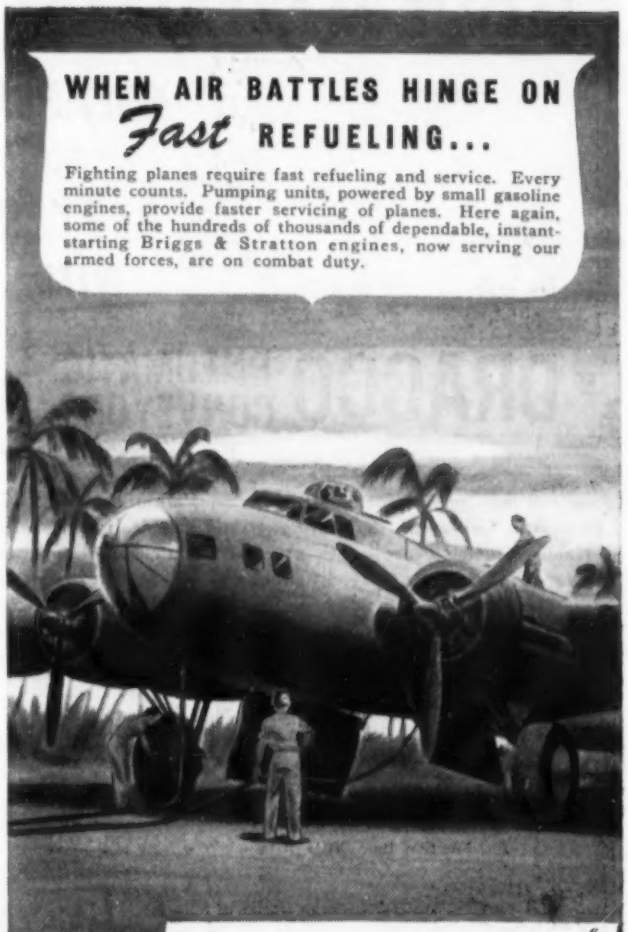
WEDGE PROTECTORS, INC.
9528 RICHMOND AVE. CLEVELAND, OHIO

Use WEDGE Chill Rings-Thread Protectors

▲ Mention Item NED-4043 when writing ▲

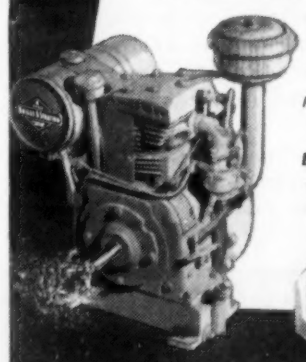
WHEN AIR BATTLES HINGE ON *Fast* REFUELING...

Fighting planes require fast refueling and service. Every minute counts. Pumping units, powered by small gasoline engines, provide faster servicing of planes. Here again, some of the hundreds of thousands of dependable, instant-starting Briggs & Stratton engines, now serving our armed forces, are on combat duty.



Meeting wartime demands for Briggs & Stratton gasoline engines has proved a BIG JOB. But we like big jobs. In fact, we'd like to see just how big a job we can handle with our facilities for high quality, precision production.

We will welcome the opportunity of discussing your 4-cycle, air-cooled gasoline engine requirements — either for immediate or post-war needs.

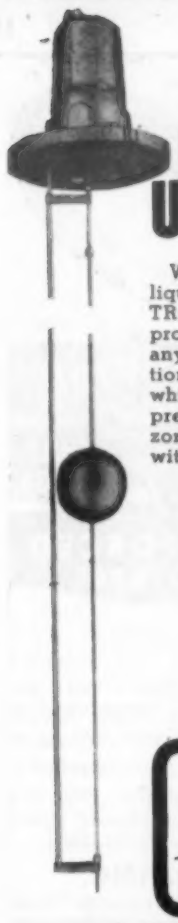


BRIGGS & STRATTON CORPORATION
Milwaukee 1, Wis., U.S.A.

FOR VICTORY BUY WAR BONDS

4 CYCLE BRIGGS & STRATTON GASOLINE ENGINES

▲ Mention Item NED-4044 when writing ▲



This Tank Float Switch Handles Liquid Differentials

UP TO 10 FEET

Wherever extreme operating differentials in liquid level control are required, the MAGNETROL Tank Float Switch fills the bill. It provides for adjustable differentials ranging anywhere from ¾-inch to 10 feet—and in addition offers the simple, foolproof operation for which MAGNETROLS are famous. Handles pressures up to 750 lbs. Available with horizontal or angle flanges for mounting on tanks with pitched roof.

Get Full Data Now on the Liquid Level Control with
NO Bellows **NO Packing Boxes**
NO Diaphragm **NO Electrodes**

MAGNETROL, INC.
331 W. Huron St. • Chicago, Illinois
A Division of Fred H. Schaub Engineering Co., Inc.

MAGNETROL
LIQUID LEVEL CONTROLS

▲ Mention Item NED-4047 when writing ▲

MOVE MATERIALS

CHEAPER AND BETTER WITH

• DRACCO PNEUMATIC CONVEYORS

Some of the largest corporations in America are using DRACCO Pneumatic Conveyors for moving grains, chemicals, and other granular materials because they consider it the cheapest and best way. Materials are moved efficiently without creating dust hazards or becoming contaminated in transit. The work is done with a minimum of help—in most installations ONE man and a DRACCO Pneumatic Conveyor does the work formerly done by SEVERAL men. Why not investigate?

Write for Bulletin No. 526

DRACCO CORPORATION
4053 E. 116th Street, Cleveland, O. New York Office: 130 West 42nd Street

PNEUMATIC CONVEYORS • DUST COLLECTORS

▲ Mention Item NED-4048 when writing ▲

Announcing the **NEW**

G-R 49

An EXTRA-HEAVY DUTY WELDER for Continuous Operation

POWER FACTOR CORRECTED

● **HERE IS A POWERFUL MACHINE** built with an oversized core working at low flux densities to provide a generous safety factor for *continuous welding loads.* Model 49, with a welding range of 100 to 675 amperes, has been especially designed to work around the clock week after week.

Cool in operation (forced ventilation is standard), the G-R 49 handles rod varying from ⅛-in. to ⅜-in. with only a twist of the hand wheel; completely meets every demand for a manually-operated machine for the fabrication of heavy plate.

GLENN-ROBERTS COMPANY
1009 FRUITVALE AVENUE, OAKLAND, CALIFORNIA
2107 ADAMS STREET, INDIANAPOLIS, INDIANA
P. O. Box 1814, Washington, D. C.

▲ Mention Item NED-4049 when writing ▲

OXYGEN FLOW METER

Providing instantaneous readings and requiring neither calculations nor application of correction factors, Emco flow indicating meter is calibrated to read liters of oxygen per minute. Meter is constructed entirely from metal. It operates by principle of floating piston whose positioning is actuated by flow of gas through orifice of variable area. Piston is lifted by incoming gas until its weight balances pressure loss through orifice area. At point of balance, flow rate may be read directly from pointer which is attached to piston.

Meter is compact, light in weight and easy to transport in fitted carrying case. Four sizes are available to record maximum flow rate of 2, 5, 10 and 150 liters per minute, respectively. Made by **Pittsburgh Equitable Meter Co.**, 404 N. Lexington Ave., Pittsburgh, Pa.

▲ Mention Item NED-4050 when writing ▲

OPEN END WRENCH

Replacing right angle wrenches, this open end wrench can be used for brakes and other purposes where tool must operate in very limited space. Nuts which would be impossible to handle with other wrenches are readily removed because tool functions in space where only an inch or two of movement is permitted. It has 15 and 60-degree heads, and design permits 24 different bites on nut in 360-degree circle. Tool is available on priority of A-9 or higher. Made by **New Britain Machine Co.**, Dept. A, New Britain, Conn.

▲ Mention Item NED-4051 when writing ▲

PORTABLE OIL FILTERS

Convenient for operation in remote sections or at points where electric power is not readily available, Hilco portable oil filtering unit consists of standard Hyflow oil filter and small gasoline engine driving rotary pump for forcing oil through filter. Exhaust gas is passed through jacket around filter for heating this unit. This set-up is suitable for filtering many types of oils such as those used for lubrication and general use in Diesel engines, gasoline engines and locomotives; for machine tool cutting oils; insulating oils and fuel oils.

Oil can be piped directly from equipment to filter inlet, purified and returned to equipment, or by installing dirty oil and clean oil tanks. Units are available in sizes ranging from 1 gallon per minute up to several hundred barrels per hour, depending on type of fluid to be filtered. Made by **The Hilliard Corp.**, 40 W. Fourth St., Elmira, N. Y.

▲ Mnetion Item NED-4052 when writing ▲

LOW COST—COMFORTABLE

DAVENPORT

WOOD SOLE SAFETY SHOES

DAVENPORT Wood Sole Shoes are especially designed for use where ordinary leather or rubber soled safety shoes do not offer enough protection. Wooden soles provide sure footing on damp, slippery floors. Hot and rough surfaces cannot injure your workers' feet. Perspiration of the feet is more rapidly dispersed with Wood Sole Shoes.

Comfort as well as foot protection is built into all Davenport Wood Sole Shoes. Vamp and uppers are of pliable oiled grain leather. Counters are made of first grade sole leather. Thick felt insoles provide additional comfort. Soles are of close-grained maple and have correct rock from heel to toe for ease in walking.

All Davenport Wood Sole Shoes are available with Safety Toes.

Wide variety of styles, each designed for a particular industry.

DELIVERY OF SHOES SUBJECT TO WAR REGULATIONS!

F. J. STAHMER SHOE CO.
World's Largest Exclusive Manufacturer of Wood Sole Footwear
2375 BOIES AVENUE DAVENPORT, IOWA

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• GRINDING • SANDING • WIRE BRUSHING • DRILLING • BUFFING • POLISHING • FILING

ALL Call for

STOW FLEXIBLE SHAFT

MOBILE POWER UNITS

Whether the job is in the toolroom, machine shop, assembly line or maintenance department—there is the chance for saving manpower, cutting time, lowering costs, with Stow Flexible-Shaft Mobile Power Units.

With their easy portability, they can be moved directly to the work. With their positive, flexible drive and their handy tool holders, an operator can apply them to the work from any angle. In hundreds of war-production plants, this adaptability in the use of grinding wheels and points, abrasive discs, rotary files, small cutters, sanders, wire brushes and buffing wheels furnishes the solution to many problems and emergency needs. For drilling in cramped quarters with electric or pneumatic drills, Stow Flexible Drill-Shafts (illustrated opposite) are also furnished.

Write for complete description and prices

STOW Manufacturing Co.
26 SHEAR ST. BINGHAMTON, N.Y.

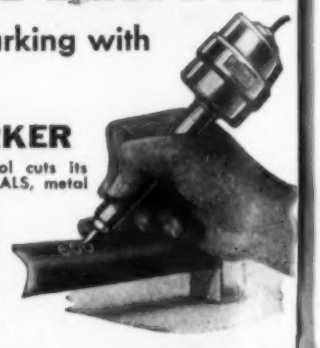
▲ Mention Item NED-4054 when writing ▲

Tools, Parts, Products

Can also be

"FINGERPRINTED"

by Permanently Marking with



IDEAL ELECTRIC MARKER

This small, powerful Marking Tool cuts its mark permanently on ALL MATERIALS, metal glass, ceramic etc. Used like a pencil it operates from any electrical outlet; makes 7,200 cutting strokes per minute. It's ideal to mark stock, part numbers, sizes and other important identification marks, to decrease thefts, loss and confusion. Available with Diamond Point for marking extra hard materials.

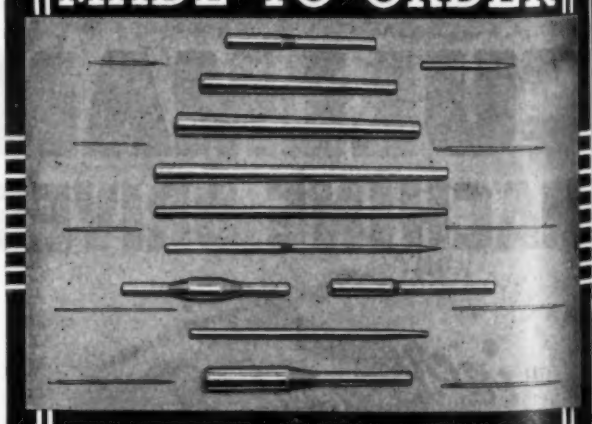
IDEAL ELECTRIC ETCHER

This All-Purpose Etcher permanently marks anything made of smooth-surfaced Iron, Steel or their Alloys. Burns a smooth permanent mark right into the surface, regardless of the hardness of metal. 4 Etching Heats. Everything completely enclosed in modern streamlined case. Three other models available.

IDEAL Sycamore
★ IDEAL COMMUTATOR DRESSER CO. ★
1032 Park Avenue Sycamore, Ill.
Sales Offices in All Principal Cities

▲ Mention Item NED-4055 when writing ▲

MADE TO ORDER



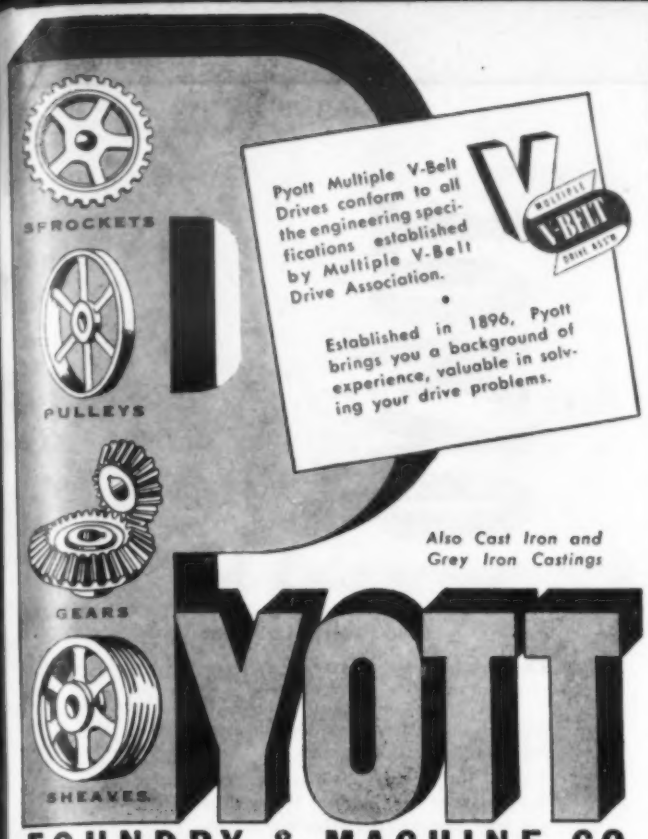
Tubes, Rods, Wire reduced by rotary swaging to your specifications by the pioneer rotary swaging machine builder.

Cuts show various tubes reduced, tapered and closed on end by swaging. Solid work up to ⅝" diameter and medium wall tubing up to 2½" O. D. can be handled.

You benefit from our nearly seventy years' rotary swaging experience.

The Torrington Company
SPECIALTY DEP'T.
Torrington, Conn., U.S.A.

▲ Mention Item NED-4056 when writing ▲



FOUNDRY & MACHINE CO.
328 NORTH SANGAMON STREET • CHICAGO

▲ Mention Item NED-4057 when writing ▲

TO WIN THE WAR TODAY —FOR YOU TOMORROW!

Many a war production job has been simplified by taking advantage of the wide variety of shapes that are standard with **PAGE SHAPED WIRE**—square, diamond, triangle, half-round, oval, flat, hexagon, octagon, channel, etc., in diameters to 3/8" and end section areas to .250 square inches.

True, only war needs can get deliveries of **PAGE SHAPED WIRE** today, but we gladly will discuss your peace-time plans. We may be able to help with them.

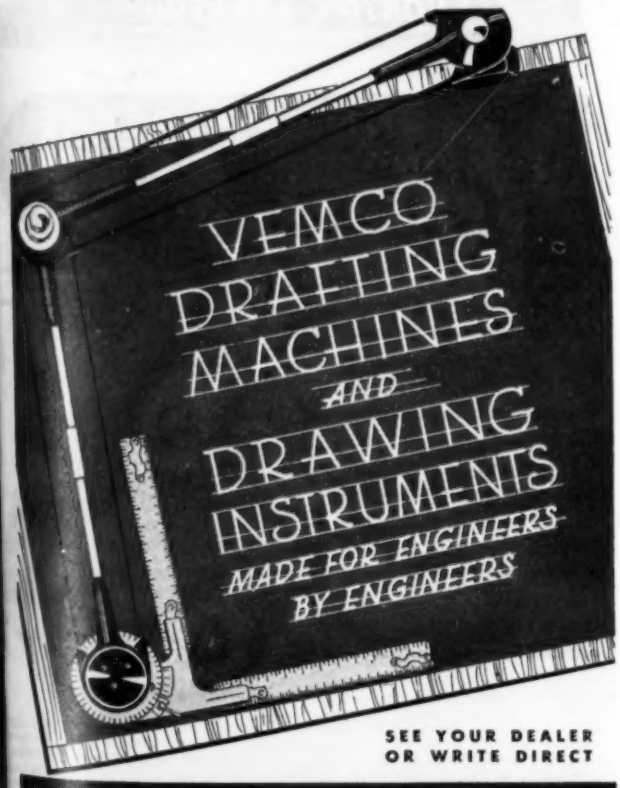
PAGE SHAPED WIRE

PAGE STEEL AND WIRE DIVISION
Monessen, Pa., Atlanta, Chicago, New York, Pittsburgh, San Francisco

In Business for Your Safety

AMERICAN CHAIN & CABLE COMPANY, Inc.
BRIDGEPORT • CONNECTICUT

▲ Mention Item NED-4058 when writing ▲



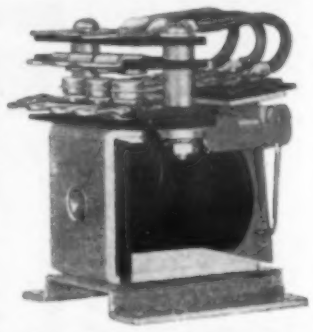
SEE YOUR DEALER OR WRITE DIRECT

V & E MANUFACTURING CO.
PASADENA • CALIFORNIA

▲ Mention Item NED-4059 when writing ▲

AIRCRAFT RADIO RELAY

Designed for use in aircraft, series 345 general purpose radio relay is available in contact combinations from single pole single-throw, up to three-pole double-throw. This feature combined with large coil winding area makes this relay particularly efficient in compact space. Dimensions are 2⅝ x 2-1/32 x 1-11/16 inches. Contacts, rated 12 amperes at 24 volts direct current, are arranged to resist acceleration and vibration ten times gravity in all positions.



Coil resistances range from 0.01 ohm to 15,000 ohms in varnish impregnated and baked coil. Standard voltages are 16 to 32, however other values are available. Parts are plated to resist deterioration under conditions of high humidity. Made by **Guardian Electric**, Dept. 345, 1626 W. Walnut St., Chicago, Ill.

▲ Mention Item NED-4060 when writing ▲

SOLVENT AND METAL CLEANER

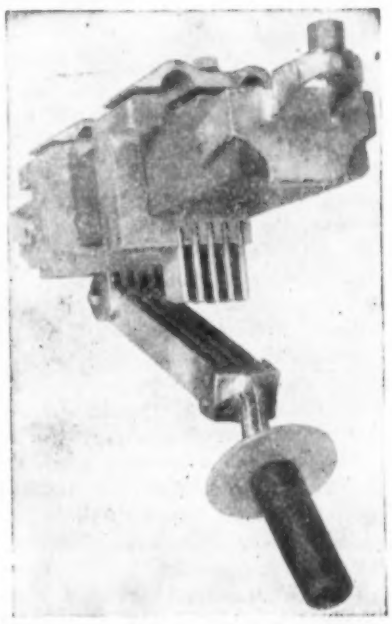
No. 1923 acid rust solvent and metal cleaner is intended for use on ferrous metals and galvanized sheets. Supplied as free flowing powder which is readily soluble in cold or warm water, this material will remove oxides quickly in cold solution without attacking metal itself.

Metal to be cleaned is immersed in solution for required time, varying from two seconds to ten minutes. Cold water rinse is then used. When cleaner is used hot, wood or lead lined steel tanks should be used. Made by **Nielco Laboratories**, 19720-24 Florence Rd., Detroit, Mich.

▲ Mention Item NED-4061 when writing ▲

FEEDER SWITCHES

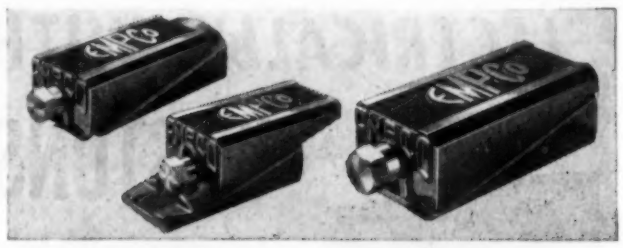
Designed for operation on 275 to 600-volt direct current, this jumbo line of high amperage insulator feeder switches can be used for either sectional or main switches. Double the size of former switches used for this service, these units have four ¼ by 1½-inch bus bars.



Switch is mounted on roof of mine and is suspended with expansion bolts and bolted clamps which hold cable rigidly. Rubber handle and fiber guard are standard equipment. Switch is locked in open position by dowel pin. Made by **Mosebach Electric & Supply Co.**, 1162 Arlington Ave., Pittsburgh, Pa.

▲ Mention Item NED-4062 when writing ▲

NEW · SELF-ALIGNING 2-Way Control JACK



For Machine Tools · Special Machinery · Industrial Furnaces · Large Surface Plates · Large Assembly Fixtures · Tool Room and Production Equipment, Etc.

Constantly increasing production schedules involving quick, economical machine set-ups, emphasizes the need for EMPCO Leveling Jacks . . . Jacks embodying features which assure self-alignment with smooth, accurate, positive adjustment.

The EMPCO Leveling Jack consists of only three parts: The upper and lower castings and the adjusting screw. The two castings are so fitted as to permit sufficient "float" for self alignment. This feature presents a full bearing and maximum support either on an even or irregular floor, hence with EMPCO Jacks there is no need of level spots for machine locations.

Write today for sizes and prices. PROMPT DELIVERY—Deliveries made from stock.

ENTERPRISE MACHINE PARTS CORP.
2739 JEROME DETROIT, MICH.

For further details check on reply card AE No. 3707

▲ Mention Item NED-4063 when writing ▲

Use "PERMAFLEX" Resurface and Patch INDUSTRIAL FLOORS

Bonds Perfectly—Never Comes Loose

No Chipping Required—Install directly over your old concrete, wood, brick or stone floors, walks or drives. Interior or Exterior.

WEARPROOF — SLIPPROOF — RESTFUL
DUSTPROOF — WATERPROOF — QUIET

Many users apply "Permaflex" over new concrete to prevent wearing away of the concrete under truck wheels and thus preserve structural strength.

The most severe trucking conditions in 400 of the largest industrial plants show no destructive effect on "Permaflex" after years of use.

Every conceivable trucking condition was fully met.

AMAZING! UNBELIEVABLE!
Until you try **"PERMAFLEX"**

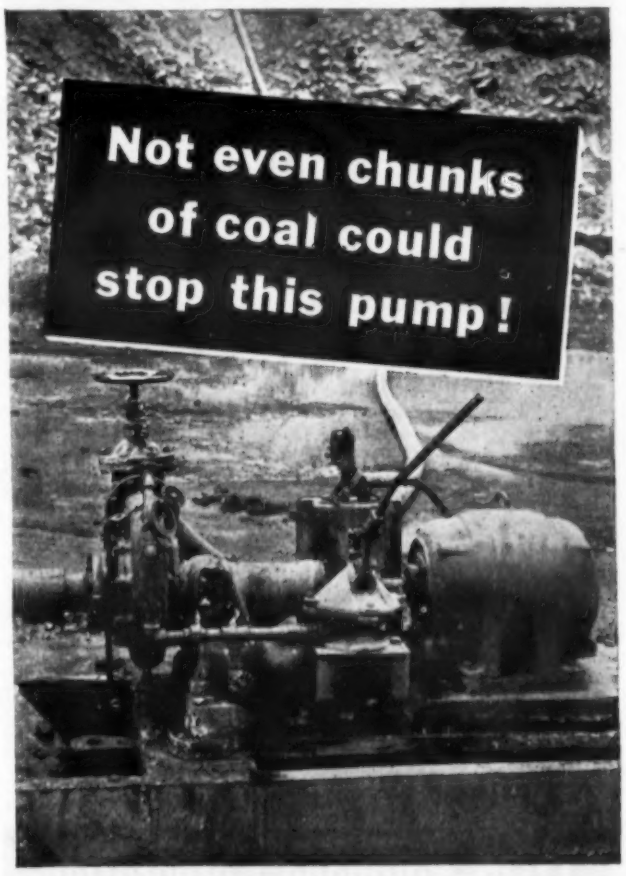
Users include U. S. Steel, Bethlehem, Republic, General Motors, A. O. Smith, Western Electric and leading Railroads.

TEST 100 SQ. FT.—BE CONVINCED
Send for literature and trial offer.

INSTALL COMPLETE 12½c per square foot

PERMAFLEX PRODUCTS COMPANY
1848 North Front Street, Philadelphia, Pa.

▲ Mention Item NED-4064 when writing ▲



F-M Trash Pumps stand up to difficult pumping jobs because of (1) especially hardened iron impeller resistant to abrasion; (2) unusual thickness of impeller; (3) strength of the volute; (4) abrasion resistance of the 300 Brinell Shaft sleeves.

Above is one of several Fairbanks-Morse Trash Pumps which were installed years ago by the Midland Electric Coal Corporation to drain its surface pits. And the pumps did the job. They withstood the grit of the muddy field . . . drained off coarse surface material . . . handled chunks of stone and coal in the water line — and they're still doing it.

The ability of F-M Trash Pumps to "take it" under conditions that would ruin an ordinary pump has led to their installation in many coal mining operations—as well as in paper mills, gelatin plants, beet sugar plants, tanneries, etc., where pumping jobs are difficult.

When you need a pump — or pumps — to increase or maintain production schedules, use your priority to get the make and type of pump suited to—and that can stand up to your pumping job . . . Fairbanks-Morse Pumps. Fairbanks, Morse & Company, 600 South Michigan Avenue, Chicago, Illinois.

FAIRBANKS-MORSE
DIESEL ENGINES · PUMPS · MOTORS · GENERATORS · SCALES · WATER SYSTEMS · FARM EQUIPMENT · STOKERS · AIR CONDITIONERS · RAILROAD EQUIPMENT
Pumps

▲ Mention Item NED-4065 when writing ▲

Do You Know how leading welders compare today?

GET THE FACTS on Allis-Chalmers great new welder — the Ampac "200"! Write today for B6241A.

Here may be the answer to many of your welding problems. This new bulletin on Allis-Chalmers outstanding Ampac "200" matches 4 leading types of transformer welders in their use of 11 important features. It shows which units weld at low currents, which save power, which have wide welding range, etc. For the full story, send for Bulletin B6241A now!

ALLIS-CHALMERS
MILWAUKEE-WISCONSIN

▲ Mention Item NED-4066 when writing ▲

New Model

LYON
Hydraulic
ELEVATING TABLE

Now offering many new features for

1. Handling dies.
2. Locating work in convenient positions for welding.
3. Transferring heavy parts from one level to another.
4. Supporting overhanging work.
5. Bringing work to convenient heights for the operator.
6. Operations where easy foot-actuated elevation is advantageous.

Latest improvements give many advantages over the previous model of LYON Hydraulic Elevating Table that has proved so popular.

Standard model carried in stock. Seven optional features can be applied to the standard model before shipment, or can be supplied later after table has been put into use.

Special models can also be supplied.

Write today for new literature just off the press.

LYON-Raymond Corporation
MATERIAL HANDLING EQUIPMENT
259 Madison St. Greene, N. Y.

▲ Mention Item NED-4067 when writing ▲

OHMITE RESISTORS for permanent performance

They're built right!

Ohmite rugged, wire-wound Resistors have proved their worth in both the freezing cold of the arctics and the heat and humidity of the tropics . . . they do the job accurately, dependably. Many types and sizes, in regular and special units, meet practically every requirement. Units produced to Government specifications. Ohmite Engineers are glad to help you.

BE RIGHT WITH OHMITE — RHEOSTATS · RESISTORS · TAP SWITCHES

Handy Ohm's Law Calculator
Helps figure ohms, watts, volts, amperes—quickly, easily. All values are direct reading. Send only 10c in coin.

OHMITE MANUFACTURING COMPANY
4842 Flournoy Street • Chicago, U. S. A.

▲ Mention Item NED-4068 when writing ▲

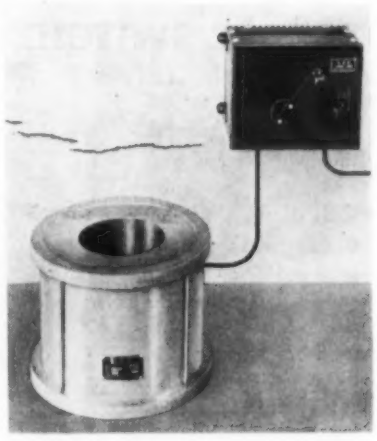
DIRECT FIRED AIR HEATERS

Fired with gas, oil or coal, these direct fired air heaters deliver pure stream of air in temperatures ranging from 150 to 350 degrees Fahr. for dehydration and chemical processes. High temperatures are obtained from carbon steel combustion chambers by means of recirculating device. Recirculating principle allows heated air to be fed back to heater's intake, so that normal temperature rise obtainable by wiping air around carbon steel fire box will produce any temperature up to 350 degrees Fahr., according to percentage of air that is recirculated. Percentage is regulated by damper in recirculating duct. To produce temperature of 350 degrees Fahr. 80 per cent recirculation is required.

Negligible radiation losses, ease of installation, availability for shipment and fact that skilled labor is not required for operation are few of advantages claimed for these heaters. Made by Dravo Corp., Dravo Bldg., 300 Penn Ave., Pittsburgh, Pa.

▲ Mention Item NED-4069 when writing ▲

HEAT TREATING FURNACE



Particularly designed for use with accelerated carburizing salts, Lee Cub bench type tool hardening and carburizing furnace operates at maximum temperature of 1600 degrees Fahr. Regulation of temperature for hardening carbon steel parts is provided by control unit furnished as standard equipment with furnace. Control unit combines switch, magnetic circuit breaker and voltage control. Control can be set to "coast" bath at low temperature when required for intermittent operation.

Furnace can be operated intermittently or continuously on any 110-130-volt circuit and, being electrically heated, temperature remains constant. There are no hot spots in pot to produce overheated areas. Uniform temperature minimizes decomposition of salts.

Furnace measures 13⅝ inches in diameter and 11 inches in height. Seamless, corrosion resistant alloy pot is 6 inches deep by 6⅝ inches in diameter. Weight is but 25 pounds. Furnace complete with control unit and carburizing salt is priced at $119.00 F.O.B. Chicago. Made by Industrial Furnace Division, Lee Grinder Co., 4708 W. Armitage Ave., Chicago, Ill.

▲ Mention Item NED-4070 when writing ▲

INDUSTRY KEEPS FIT *ELECTRICALLY* WITH WESTONS

Industry's production figures bear testimony to the outstanding contribution plant maintenance men are making to war plant efficiency. Despite obstacles such as materials' scarcities and limited manpower, electrical equipment—old and new—is being kept constantly fit for full-scale output.

As part of the efficient maintenance combat team, WESTON test instruments play an important role. For in addition to their *trustworthy indications*, they also provide features which greatly simplify preventative maintenance procedure. *In less time—at far lower cost*—electrical equipment is being kept *fit* with dependable WESTONS. Weston Electrical Instrument Corporation, 663 Frelinghuysen Avenue, Newark, New Jersey.

WESTON *Instruments*

▲ Mention Item NED-4071 when writing ▲

TOKYO

is so solly to hear
that Ceramic Products of Burned Clay
are such satisfactory substitutes for products made of hard-to-get critical materials.
You will find our Engineering and Research Departments both competent and glad of the opportunity to help you solve your material scarcity problems.

NATIONAL FIREPROOFING CORPORATION
214 East Ohio St., N. S., Pittsburgh, Pa.

▲ Mention Item NED-4072 when writing ▲

Steep Ramps Are Practical
with Alundum Stair Tile

IN many locations in war plants ramps are the easiest and safest way to move workers and materials from one level to another. The highly non-slip surface of Alundum Floor Tile makes steep ramps practical. And the non-slip surface of Alundum Tiles is not lessened by water nor by wear. Write for catalog—no obligation. Ask for Form 2201-NE.

NORTON COMPANY, WORCESTER, MASS.

T-488

NORTON ABRASIVES

▲ Mention Item NED-4073 when writing ▲

Only PANNIER SUPREME STAMPING HOLDERS HAVE *all* THESE ADVANTAGES

REPLACEABLE HEAD
SHAPE DISTRIBUTES BLOW
ONE SOLID PIECE
HARDENED ANVIL
NO PINS OR SPRINGS

Exclusive, patented, alloy steel ANVIL prevents wear, assures constant type alignment. Replaceable Striking Head eliminates mushroming and spalling problems; adds greatly to holder life. Many other features help to reduce stamping costs. Tell us material to be stamped, conditions, size and number of characters in a line. Our engineers will recommend the kind of holder best suited to your specific needs. Many sizes, types and styles available.

MASTER PANNIER MARKING

Steel, Type, Stamps, Dies; Embossing Equipment; Metal Tags, Checks, Badges, Stencils; Rubber Dies, Stamps.

PANNIER BROS. STAMP CO.
301 PANNIER BLDG., N. S., PITTSBURGH, PA.

▲ Mention Item NED-4074 when writing ▲

DUSTKOP

Dust Collector has it.

Quickly, easily moved from one grinder to another, even the installation of DUSTKOP requires no costly duct work. Ideal for collecting dust from tool, surface, cutter and internal grinders, DUSTKOP is operated by G.E. (or equal) continuous duty motor. Dust laden air is driven up from fan and sent through the efficient cyclone separator. Prompt deliveries on high priorities.

Write Now for Bulletins

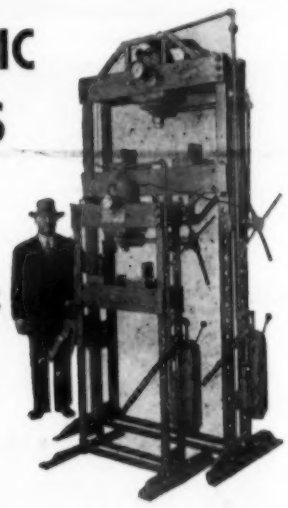
Aget-Detroit Co.

2050 Book Bldg. CAdillac 3090 Detroit 26, Mich.

▲ Mention Item NED-4075 when writing ▲

KRW HYDRAULIC ARBOR PRESSES

for War Production



Standard Hydraulic Presses in 25, 50 and 75 ton capacities. Special Presses engineered for specific war production needs.

● The exclusive design features which have given KRW Standard Presses their reputation for speed and efficiency are available to war production manufacturers who require presses of special design. The illustration shows a *special*, extra high 75 ton KRW Press in comparison with the Standard 25 ton unit.

KRW also builds bench-type Arbor Presses in 1/2, 1 and 3 ton capacities.

K. R. WILSON

10 LOCK ST., BUFFALO, N. Y.

▲ Mention Item NED-4076 when writing ▲

Fray RAM TYPE No. 7-B

VERTICAL UNIVERSAL MILLING MACHINE

Used the world over for jig boring, die and permanent mold work, production operations, etc.

★ Write for New Catalogue

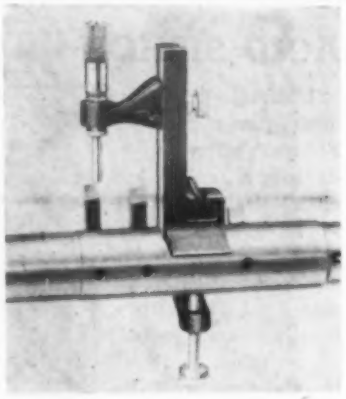
FRAY MACHINE TOOL CO.

521 W. WINDSOR ROAD, GLENDALE, CALIFORNIA

Makers of "All-Angle" Milling Machines & Milling Attachments

▲ Mention Item NED-4077 when writing ▲

BORING TOOL GAGE



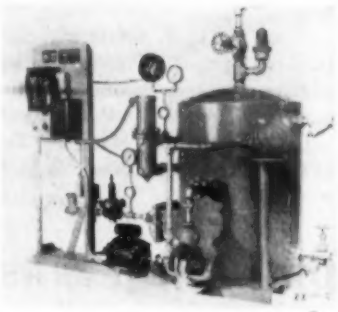
Setting of closely spaced boring tools is accomplished quickly and accurately with this model B Pedestal Micrometer. Device is also adaptable for other gaging purposes. Gage consists of pedestal having wide base with wide V-opening and flat surfaces at ends of extensions. With V-groove, it can be placed on boring bar where it is held by clamp which engages slot in top of base. Flat surfaces permit gage to be placed on surface plate, machine bed or other plane surfaces from which measurements are to be made.

Arm which carries micrometer head is clamped to vertical surface with screw through slot in upright arm. Arm may be clamped to either side of pedestal without changing clamped position of pedestal. Gage fits between boring tools having as little as 2-inch spacing between them. Arm overhang permits setting of boring tools placed 3½ inches apart without changing position of pedestal.

Dial indicator can be substituted for micrometer head for reading thousandths or tenths. Three clamps are supplied to fit all size boring bars from 1 to 5 inches in diameter. Made by **Bartelt Engineering Co.**, 1412 Partridge Ave., Beloit, Wis.

▲ Mention Item NED-4078 when writing ▲

VAPOR TYPE CLEANER



Worn lubricant, dirt, grit and moisture are removed from internal surfaces of gear type transmissions, differentials, gear cases and similar locations with this model 35-S Dee Tee Vapor Cleaner. As many as five housings can be serviced at one time and entire operation requires only 7 to 10 minutes. Equipment was designed for cleaning and thawing gear cases of military vehicles, but it may also be used for industrial applications.

Solvent is heated to create constant flow of hot, clean vapor into housing. Vapors penetrate through worn lubricant to metal of gears and housing, condensing on colder metals to wash and rinse surfaces free of contaminants. Because temperature of Dee-Solv solvent vapor is higher than boiling point of water, moisture from condensation is removed.

Steam coils heat solvent in vapor generator tank which may be connected through pump and hose directly to solvent supply drum. Proper solvent level is maintained in generator by liquid level control. Vapor pressure is maintained within narrow range by means of automatic pressure control.

Smaller model of this cleaner is portable, electrically heated and fully automatic. Made by **Circo Products Co.**, Dept. N.E.D., 2835 Chester Ave., Cleveland 14, Ohio.

▲ Mention Item NED-4079 when writing ▲

SCAIFLUX 21

A SILVER ALLOY BRAZING FLUX

√ **FULLY ACTIVE AT 900°F**
This low "active" temperature means less scale to contend with, faster brazing, better results.

√ **PERSISTENT**
Scaiflux 21 remains stable and active at temperatures above 1650°F.—well beyond the temperature range for silver alloys.

√ **SOLUBLE IN WARM WATER**
Brazing residue is quickly and easily washed off in warm (140°F.) water.

√ **SIMPLIFIES BRAZING PROCEDURE**
Transparent residue permits brazer to constantly observe the progress of his work. This fact plus high wetting power, and other advantages of Scaiflux 21 simplifies brazing procedure.

WRITE FOR COMPLETE DETAILS

Paste or powder in convenient jars

SCAIFE COMPANY

OAKMONT, PA.

▲ Mention Item NED-4080 when writing ▲

LUBRIPLATE 130-AA is the ideal wire rope lubricant. It has enormous film strength and adhesiveness so it will not squeeze out under pressure. It is impervious to water and moisture and most industrial fumes, hence it prevents rust and corrosion. By doing a better lubrication job, LUBRIPLATE 130-AA enables strands and wires to work with minimum friction, therefore reduces wire fatigue. Let us send you facts and figures about LUBRIPLATE 130-AA. Write today.

LUBRIPLATE DIVISION

FISKE BROS. REFINING COMPANY

Newark, N. J. - Since 1870 - Toledo, Ohio

Write for the name of the dealer nearest you.

LUBRIPLATE

ARRESTS PROGRESSIVE WEAR

▲ Mention Item NED-4081 when writing ▲

*Sanymetal**

Asbestos Board Toilet Compartments

complete with door hardware and partition fittings

NOW AVAILABLE—READY TO INSTALL

REQUIRING COMPLIANCE WITH STRICT PHYSICAL TESTS and then risking the health of employees by neglecting to provide adequate and sanitary toilet and washroom facilities is not only inconsistent but imperils the health of your employees. Recurring cases of minor illness among men and women employees are usually traceable to annoyances that result in resentment, irregular habits and premature fatigue. Many industrialists have obtained relief from the plague of employee illness by using Sanymetal Asbestos Board Toilet Compartments to convert unclean toilet facilities into orderly and sanitary conveniences. They have also obtained these additional advantages:

SAVE TIME AND MONEY: No need to design or attempt to build makeshift toilet compartments. Sanymetal Specialists have worked out wartime toilet compartments of economic design that are being made from non-critical materials, available today and furnished complete with door hardware and partition fittings.

CONVENIENCE AND SANITATION: These are embodied in Sanymetal Asbestos Board Toilet Compartments in a degree unappreciated and unapproached, and usually overlooked by those lacking Sanymetal's 27 years of specialized experience in this line.

SUITABLE MATERIAL AND ENGINEERING FEATURES: Asbestos Board is a rigid, structural material, formed by laminating cement-asbestos board to a core which provides a strong, rigid installation and is moisture, fire and wear resistant. Free from dirt-collecting pockets and ledges, these compartments are easy to keep clean.

ONE ORDER—ONE PRIORITY, COVERS THE DELIVERY OF EVERYTHING YOU NEED, even complete door hardware and partition fittings, so that you can proceed to complete the installation without the slightest delay.

COMES READY TO INSTALL without trial erection or aggravating attempts to assemble materials.

Take no risks with inadequate or out-dated toilet facilities that may endanger the production of vital war materials. Protect the good health and well-being of your employees.

Write for complete data on Sanymetal Asbestos Board Toilet Compartments. But, for quick action, see "Partitions" in your phone book, for local Sanymetal Representative.

Plywood and tempered presdboard lockers, developed by Sanymetal Engineers are now available immediately. Write for Bulletin No. 920.

* *Trade Mark Reg. U. S. Pat. Off.*

THE SANYMETAL PRODUCTS CO., INC.

1719 Urbana Road • Cleveland, Ohio

Please rush by return mail your new Bulletin on:
☐ Sanymetal Asbestos Board Toilet Compartments
☐ Sanymetal Pressed Hard Fibreboard Lockers—Bulletin No. 920

Name .....
Position .....
Firm .....
Address .....
City ..... *State* .....

▲ Mention Item NED-4082 when writing ▲

Solve Many Problems With New Wire Rope Slings

Hundreds of war production plants now use Macwhyte Wire Rope Slings as the connecting link between crane and load . . . to handle everything from tanks, guns, ship propellers, etc., to engines, pipes, castings and the like. New sling designs are constantly being developed to meet new conditions.

Available from Macwhyte Company are many types, styles and assemblies of wire rope, *made* to meet your job requirements. There are *Atlas* round braided wire rope slings, *Drew* flat braided slings, *Monarch* single part slings, grommets, multiple part slings, etc. Supplied in any length needed and built to harness any load cranes can handle.

We can help you select the best slings for your job. Our wide experience is yours for the asking. Simply write on your company letterhead. When writing, ask for helpful rigging bulletins. Ad 686-S

Macwhyte Company SLING DEPT.
2932 FOURTEENTH AVENUE, KENOSHA, WISCONSIN

Macwhyte Slings are manufactured from MONARCH Whyte Strand Wire Rope by men and women in our large, highly specialized sling department making nothing but slings for industry. That's why we can offer you such a wide selection and a broad experience in supplying slings for handling loads in your plant.

▲ Mention Item NED-4086 when writing ▲

16-PAGE SIMPLIFIED GUIDE COVERS THESE IMPORTANT SUBJECTS

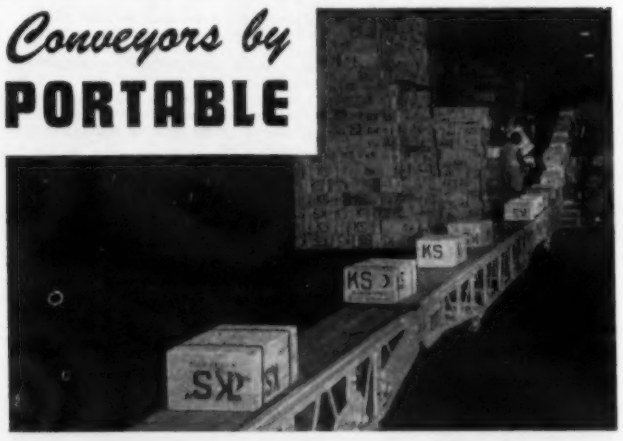
- Functions of Control
- How to Select Correct Control
- Manual vs. Magnetic
- Full-voltage vs. Reduced-voltage Starting
- Undervoltage Protection and Release
- Special Enclosures
- Control for Wound-rotor Motors
- Accessories

Ask our local office for Bulletin GEA-4015, or write to General Electric, Section 676-124, Schenectady, N. Y.

GENERAL ELECTRIC 676-124-8920

▲ Mention Item NED-4087 when writing ▲

Conveyors by **PORTABLE**



ARMY E NAVY
Awarded Feb. 8, 1943

Speeding goods on the way to war — in factories, warehouses and right into the holds of ships—are Farquhar built Conveyors. Designed to handle any type of material—in boxes, bags or loose—either portable or stationary conveyors are cutting down necessary man hours in every place they are serving. Your handling problems can be speeded with Farquhar Material Handling Conveyors. Want evidence?

Portable **Machinery Division**
A. B. FARQUHAR CO., Limited
Chicago, Ill. York, Pa. Clifton, N. J.

ACID SIPHON

Utilizing safe vacuum pump principle, Speare's safety siphon discharges acids and chemicals from carboys, drums and barrels. It is composed of acid resistant casing inserted into carboy, flexible Saran plastic siphon tubing and positive flow control valve at pouring end. Simple pumping action of tubing inside casing generates steady flow.

Siphon has no glass parts to break, and requires no bulbs or auxiliary pumping apparatus. It will not build up dangerous pressures. Materials are fully tested for sulfuric, nitric, hydrochloric, sulfurous, glacial acetic and acetic acids, bleaching solutions and many other chemicals. Made by **Pulmosan Safety Equipment Corp.**, Dept. NED, 176 Johnson St., Brooklyn, N. Y.

▲ Mention Item NED-4089 when writing ▲

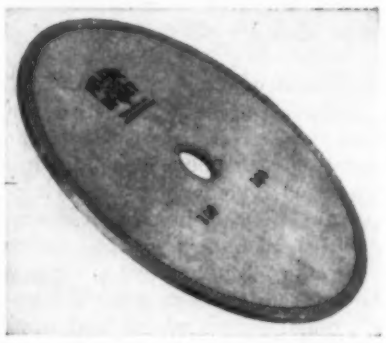
ADHESIVE REMOVER

Safe, positive and effective removal of adhesives and adhesive substances is claimed to be possible with Ad-Heez-Ex which was especially developed for use by aircraft industry. Available in containers ranging in capacity from 4 ounces to 5 gallons, product lists at $2.50 per gallon in 1-gallon containers.

Gauze or cloth saturated with remover is applied on surface of tape or adhesive substance. As tape is lifted with moderate tension, saturated cloth is applied at fold to release tape. All traces of adhesive can be removed easily by washing with material. Made by **Trans-American Airports Corp.**, 271 Madison Ave., New York, N. Y.

▲ Mention Item NED-4090 when writing ▲

DIAMOND ABRASIVE WHEEL



Resinoid rim of this Di-Met diamond abrasive chipbreaker contains diamonds bonded to laminated linen core. Linen laminations are interlaid with resinous compound and baked under high pressure to form serviceable composition. High strength and required elasticity are provided for grinding of carbide tools. Shock and sudden impact are absorbed, reducing chipping of wheel edges.

Diamonds are graded for size to produce fast cutting wheel. Suitable for rapidly cutting chipbreaker grooves, shaping and form grinding of carbide tools, wheels are made in 3, 4 and 6-inch diameters of ⅛-inch rim thickness. They must be used with coolants, preferably water. Made by **Felker Mfg. Co.**, 1125 Border Ave., Torrance, Calif.

▲ Mention Item NED-4091 when writing ▲

THEY'RE THE NUTS FOR POSTWAR PLANNING

• It's true that now we can't supply all the Elastic Stop Nuts Uncle Sam wants—even with three big plants running 24 hours a day.

This is because these nuts stay put. There's a red elastic locking ring in the top which grips the bolt with an oil- and water-proof seal and eliminates all axial play and wobbling.

When the war's won, the millions of Elastic Stop Nuts we're pouring out each day can be turned to the fastening problems of peace.

They can be turned to producing better products and equipment that will save time and expense for maintenance engineers.

Whatever your fastening problems might be, our engineers, experienced in the work of both war and peace, will be glad to help cope with them.

ELASTIC STOP NUTS
Lock fast to make things last
ELASTIC STOP NUT CORPORATION OF AMERICA
UNION, NEW JERSEY AND LINCOLN, NEBRASKA
ESNA TRADE MARK

Direct Action **FLOAT CONTROL**
with counter weight assembly

Unequalled simplicity in control and shut-off for low working pressure, ease of installation and reduced maintenance feature this R-S Float Control Valve. Streamlined for self-cleaning.

R-S Butterfly Valves, manually and automatically operated, provide simplified control and shut-off for any material that flows or is forced through a pipe—sizes to 84-inches and pressures to 900 psi.

Write for details, complete catalog and information on special "A" and other metals for resistance against heat, abrasion and corrosion.

VALVE DIVISION
R-S PRODUCTS CORPORATION
4527 Germantown Ave., Philadelphia 44, Pa.

R-S *Streamlined* BUTTERFLY VALVES

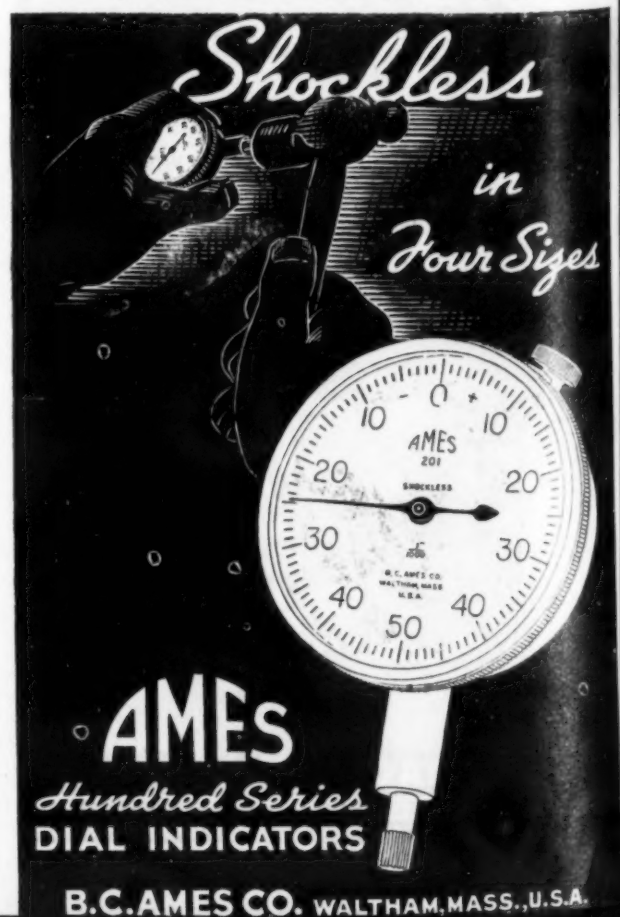
▲ Mention Item NED-4093 when writing ▲

ALL products have to be handled after production. To save manpower, time and space, one manufacturer uses Towmotor to move and stack 600 brick as a 3500-pound unit load. Give you any ideas? Then write Towmotor Corporation, 1219 East 152nd Street, Cleveland, Ohio and . . .

ASK FOR CATALOG!

TOWMOTOR THE 24-HOUR ONE-MAN-GANG

▲ Mention Item NED-4094 when writing ▲



PULMOSAN EYESHIELDS

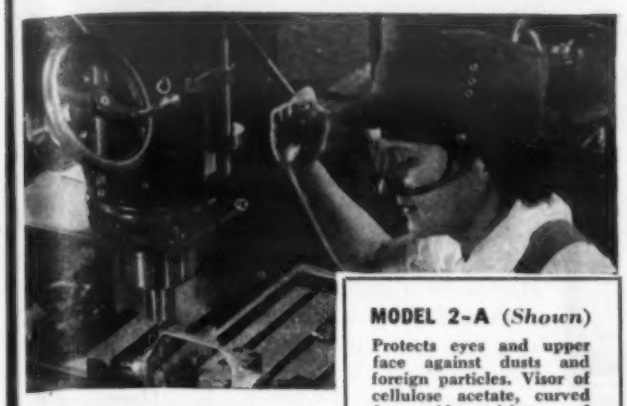


Photo Courtesy Sperry Gyroscope Co.

MODEL 2-A (*Shown*)

Protects eyes and upper face against dusts and foreign particles. Visor of cellulose acetate, curved for wide vision and strength. Does not fog, permits wearing spectacles. Clear, green and amber shades. Get prices.

Types, Sizes and Shades for Chips, Sparks, Splashes, Glare

Practically every eye and face hazard in industry can be met with the comprehensive line of Pulmosan Face and Eyeshields. There are types for chipping, grinding, welding, brazing, soldering, metal pouring, chemical handling and other industrial operations.

Flexible, transparent shields are non-fogging, non-inflammable, do not interfere with glasses—provide light, cool, comfortable protection. Available in 4, 5, 6, 7, 8 and 9 inch lengths, clear or colored shields. All parts replaceable. Write Pulmosan for prompt service on Face and Eyeshields. Ask for literature and prices on complete line.

PULMOSAN SAFETY EQUIP. CORPORATION

Dept. NED 176 Johnson St. Brooklyn, N. Y.

▲ Mention Item NED-4096 when writing ▲

Large and small production shops using TECO Carbide Tools, consistently report more pieces between grinds, than with other tools used. Result . . . less down-time, more production.

You get more out of TECO Carbide Tools because we put more into them. TECO Carbides are harder, denser, more uniform—thus more resistant to wear and breakage. They cut at higher speeds—hold accurate tolerances for longer runs.

If you've been thinking "all Carbide tools are pretty much alike," try a run with TECO Carbide Tools and let results speak for themselves. Available in grades, styles and sizes for practically every machining need. Write for catalog giving specifications.

TUNGSTEN ELECTRIC CORPORATION · 569 39th Street, Union City, N. J.

Branch Office: 2906 Euclid Avenue, Cleveland, Ohio
Representative: Architects & Builders Bldg., Indianapolis, Ind.

TECO Pioneers in Tungsten Carbides for over a Quarter Century **CARBIDE TOOLS**

▲ Mention Item NED-4097 when writing ▲

POWER THREADING *for All Hand Pipe Tools!*

OSTER NO. 422 POWER VISE STAND

You can use your own hand tools and vise on the Oster No. 422 Power Vise Stand. Also, you can make the legs from standard 1" pipe. Machine weighs only 140 lbs. Two carrying handles make it easy to be handled by two men.

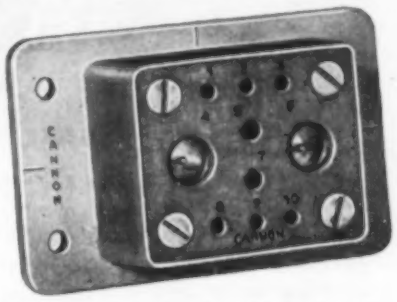
Note close-up view of new type, self-centering, universal chuck which does away with flimsy, out-board pipe supports. Standard range of machine is 3/8" to 2" pipe; Extra range: 1/8" and 1/4" pipe; Range with drive shaft: 2 1/2" to 6" pipe. Operates from any standard light socket. For complete information, ask for Catalog No. 22.

OSTER **THE OSTER MFG. COMPANY**
2066 E. 61st St., Cleveland, Ohio, U. S. A.

THREADING MACHINES · TURRET LATHES

ELECTRICAL CONNECTOR

Classed as rectangular rack type connector, DP-B10C2 electrical connector is adapted by its design to radio rack assemblies, transmitters and any general applications where both plug and receptacle must be fixed permanently in their respective units of equipment. Shell is tapered to effect close fit when engaged and two units of complete connector are self aligning but are dependent upon accuracy of equipment they connect. Insert insulation is made of molded phenolic, having eight standard contacts of brass, silver plated, and two coaxial contacts of same material and finish with isolantite insulators. Two contacts are rated at 30 amperes and six at 15 amperes. Shell is die cast aluminum alloy with sand blast and clear lacquer finish. Made by **Cannon Electric Development Co.,** Dept. 49, 3209 Humboldt St., Los Angeles, Calif.



▲ Mention Item NED-4099 when writing ▲

ELECTRICAL RELAY

Obtaining delays from 1 to 100 seconds, this thermostatic delay relay is compensated for ambient changes of minus 40 to plus 100 degrees Fahr. It can be furnished in single pole style, either normally open or normally closed. Contacts are capable of handling up to 12 amperes, 115 volts alternating or direct current. Being hermetically sealed in inert gas assures clean contacts at all times. When necessary, replacements can be easily made. It fits standard octal radio base and is compact in design. Made by **Amperite Co.,** Dept. NE, 561 Broadway, New York City.

▲ Mention Item NED-4100 when writing ▲

MARKING TYPE HOLDER

Assuring clear, even impression in marking on small, round and square pieces, Safety Sleeve type holder is especially adaptable for marking gun barrels, small tubes and for numbering stock in warehouses or stock rooms. Sturdy outside frame is made from alloy steel. Legs of frame are grooved for use on small rounds.

Top section, surrounding shank of type holder, is knurled for positive grip. Special pin, which is easily removed for quick change of steel type inserts, holds holder in place. This marking device can be made with any size or number of characters. Made by **M. E. Cunningham Co.,** 151 E. Carson St., Pittsburgh 19, Pa.

▲ Mention Item NED-4101 when writing ▲

Eliminate CUTTING OIL *Sabotage*

- CONSERVE OIL
- INCREASE TOOL LIFE
- REDUCE WEAR ON MACHINES
- AVOID PLUGGING OF TRANSFER LINES

War time industry has a two-fold obligation—increase production and quality but decrease wear on equipment. This is all but impossible when gritty, abrasive cutting oils and coolants are used, literally "throwing a monkey wrench" into schedules and multiplying the percentage of rejections.

However, cutting oils and coolants filtered by NIAGARA FILTERS are absolutely free from abrasive particles and dirt. Equipment life is prolonged and rejects minimized. The basic design—an alluvial leaf, pressure tight unit—can be adapted to any plant situation. Large central automatic systems or small portable units are available in a wide range of sizes.

Investigate the features of NIAGARA CUTTING OIL FILTERS. Consult our engineers—let us help you eliminate cutting oil sabotage.

The NIAGARA MODEL 275 Cutting Oil Filter

3080 MAIN STREET BUFFALO 14, NEW YORK **niagara filter** CORPORATION TELEPHONE AMherst 2100

FILTRATION ENGINEERS TO THE PROCESSING INDUSTRIES

K&E *Phoenix* TRACING CLOTH IS GHOST PROOF!

REG. U. S. PAT. OFF.

PHOENIX resists perspiration stains and water marks . . . withstands actual immersion in water for 10 minutes at a time. Ghost-proofing provides extra-durable working surface. You use harder pencils . . . get fewer smudges, erase without marring. You get sharp blueprints, excellent drawing contrast. Ask your K&E dealer, or write us, for brochure and generous sample.

EST. 1867
KEUFFEL & ESSER CO.
NEW YORK—HOBOKEN, N. J.
CHICAGO · ST. LOUIS · SAN FRANCISCO · LOS ANGELES
DETROIT · MONTREAL

▲ Mention Item NED-4103 when writing ▲

Send For This Booklet

THE booklet shown briefly describes some of the oxy-acetylene metalworking methods that the Linde organization makes available to speed up production programs, to lower operating costs, and to simplify problems of maintenance and repair. It also shows the catalogs that you can obtain to aid in your selection of the Oxweld apparatus and supplies needed for applying these processes.

It Will Be of Interest—and may suggest new applications—to design engineers, production and maintenance men and to oxy-acetylene process supervisors.

Write for the booklet "Linde Oxy-Acetylene Processes."

THE LINDE AIR PRODUCTS COMPANY
Unit of Union Carbide and Carbon Corporation
30 East 42nd Street UCC New York, N.Y.
In Canada: Dominion Oxygen Company, Limited, Toronto

LINDE OXYGEN . . . PREST-O-LITE ACETYLENE
UNION CARBIDE . . . OXWELD APPARATUS AND SUPPLIES

▲ Mention Item NED-4104 when writing ▲

2 *Small Parts Clamped in Exact Positions with* DE-STA-CO *Toggle Clamps*

A difficult arc butt weld job is performed swiftly and accurately through use of two De-Sta-Co Toggle Clamps—the smaller one bolted to the work bar of the larger clamp. Note that because of this unique set-up, there can be no variation in the point of welding. Also that parts can be inserted and withdrawn in minimum time. . . . A simple, inexpensive, time-saving fixture.

For clamping parts in production, use De-Sta-Co Toggle Clamps. . . . Available in all types and sizes. . . . Bulletin No. 43, illustrating many practical uses, sent free on request.

DETROIT STAMPING CO.
Established Over 25 Years
360 Midland Ave · Detroit, Mich.

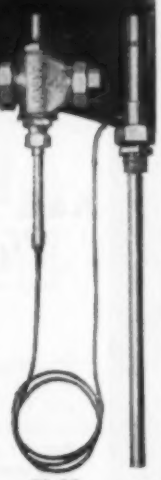
A Perfect Team

FOR PROCESS CONTROL

Here are two Sarco products that work well together on heavy duty steam heated equipment requiring accurate temperature control. Sarco float-thermostatic steam traps remove condensate continuously without shock and as fast as it forms.

Sarco self-operated temperature regulators provide gentle, throttling control of the steam supply to maintain desired temperatures within close limits.

Use this team for hot water generators, blast or unit heaters, and all types of process equipment where constant temperatures are important and the steam loads are heavy. Catalogs 450 and 600.



TR-21 Regulator 149

SARCO SAVES STEAM SARCO COMPANY, INC. 475 Fifth Avenue, New York, N. Y. Sarco Canada Ltd., Federal Bldg., Toronto, Ont.

▲ Mention Item NED-4106 when writing ▲

Names THAT INSURE *Precision* IN THE AVIATION MOTOR INDUSTRY

These big names didn't just happen . . . they "earned" their position . . . they stand for all that is best in engineering skill and precision production . . . names that have made American aircraft motors mighty, and supreme.

In the name WESSON, such leaders have recognized the leader in the production of Carbide Cutting Tools . . . a name that also means the "know how" . . . and "the will to do."

WESSON helped tool up for production of the aviation motors that are now writing history in all parts of the world . . . for Victory.

To industries desiring to machine the modern, tougher metals, faster, to closer tolerances, finer finishes . . . speeding production, conserving precious metals, improving products . . . WESSON engineers are available for counsel on present problems and on post-war planning.

WESSON CO. DETROIT MICH. (Ferndale Station)

REPUTATIONS GO ON . . . In the busy post-war era of the future, the new precision standards established in war production will be adapted to peacetime products . . . making new and better products . . . at lower production costs . . . for longer service. WESSON Carbide Cutting Tools will go on into the "new action" in industry and help advance "the more abundant life." To this end WESSON is devoting broad research and cooperation with forward-looking metal-working manufacturers.

▲ Mention Item NED-4107 when writing ▲

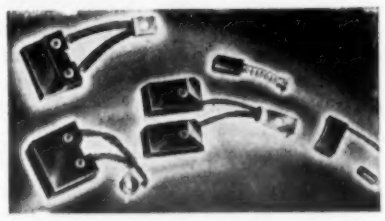
WATER PURITY METER

Providing practical, quick way of checking purity of distilled water, Barnstead purity meter is easy to use. Temperature of water is taken first. Then a dial on meter is set to corresponding temperature. Conductivity cell is immersed in distilled water and dial is moved until electric radio eye indicates correct setting. At this point, dial indicates impurity content of distilled water in terms of parts per million as sodium chloride. Entire procedure takes but few seconds and gives quick check test against predetermined standard.

Meter is compact conductivity bridge. Its dimensions are 6¾ x 5 x 2⅝ inches and its weight only 3¼ pounds. It requires no batteries, connecting directly to 110-volt 60-cycle outlet. Measurement scale reads from 1 to 15 parts per million as sodium chloride. Temperature correction scale reads from 64 to 190 degrees Fahr. Unit complete with heat resistant glass dip cell is priced at $53.00. Parts may be bought separately. Made by **Barnstead Still and Sterilizer Co.**, 38 Lanesville Terrace, Forest Hills, Boston, Mass.

▲ Mention Item NED-4108 when writing ▲

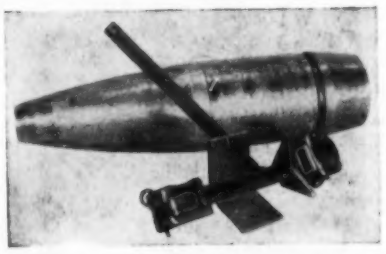
GENERATOR BRUSHES



Engineered for aircraft use at altitudes above 30,000 feet, this line of generator brushes is claimed to have shown qualities which overcame effects of thin air and low humidity which makes ordinary brushes unsuited for this use. Brushes are treated with special process developed by Westinghouse Electric & Mfg. Co. which greatly increases their life in aircraft service. Styles are especially designed for specific generators involved. Made by **Stackpole Carbon Co.**, St. Marys, Pa.

▲ Mention Item NED-4109 when writing ▲

BOX TYPE STAMP HOLDER



Designed for stamping identification marks on end and side of semi-finished 155-millimeter shell forgings in one operation, dual purpose box type holder has guide plates which level both type holders to assure clear, uniform markings. By eliminating usual separate handling required for each marking, it is claimed that marking costs have been reduced almost 50 per cent. Holder is made of special Safety steel which assures maximum service and safety by elimination of spalling and mushrooming, manufacturer states. Made by **M. E. Cunningham Co.**, 151 E. Carson St., Pittsburgh 19, Pa.

▲ Mention Item NED-4110 when writing ▲

Kum-Kleen INSPECTION STICKERS REJECTION STICKERS IDENTIFICATION STICKERS INSTRUCTION STICKERS

AMAZING NEW STICKER STOPS ERRORS

Simply press on—no moisture necessary—adhere to any smooth surface—never pop off, even when exposed to intense heat or cold—yet peeled off easily in one piece without leaving a mark. Won't pull off like string tags, fall off like wet stickers, rub off like chalk marks, pull out like pins, increase costs like metal tags. These new Kum-Kleen Dry Stickers are speeding production, eliminating errors, providing greater economy. Available in assorted sizes, shapes and colors—blank or printed.

WRITE FOR SAMPLE TODAY

Write today for free samples—make your own on-the-job test, or consult our Engineering Advisory Service.

Avery Adhesive Dept. 8 NED
451 E. 3rd St., Los Angeles

Kum-Kleen STICKERS

▲ Mention Item NED-4111 when writing ▲

NEW TRENDS IN FLOW RATE MEASUREMENT

During the last two years a definite reversal of trend in the development of meters for rate of flow measurement has become noticeable in industry. The area-type flow meter, in the form of the rotameter sight flow meter, has steadily and surely elbowed its way to the front. Already it has completely replaced the head-type meters (orifices, flow nozzles, venturis, weirs, capillaries) for many important applications and the process of replacement is still going on.

In Toricelli's equation $Q = CA\sqrt{2gh}$, the area-type meter (rotameter) obtains measurement by varying the value of "A" (area of flow passage) whereas head meters vary the value of "h" (head producing flow). Thus the rotameter "gets out from under the square-root sign," which results in a linear calibration scale instead of a square root scale crowded at the lower end. The range of flows which can be accurately metered with the rotameter is thereby tremendously increased.

Furthermore, the visibility in the rotameter of the fluid being metered and of the metering elements eliminates errors due to fouling or corrosion. Likewise, the pressure drop through the rotameter is low and constant because the flow area enlarges as the float rises in the tapered tube with flow increase. The further one delves into the details the more advantages come to light. Send for Bulletin 10-A. It is yours without obligation from **Fischer & Porter**, 288 County Line Road, Hatboro, Pa.

—Advt.

▲ Mention Item NED-4112 when writing ▲

The greater the need for Speed . .

. . . the greater the need for ARKWRIGHT TRACING CLOTHS!

If you're working under pressure, use Arkwright Tracing Cloths. Then you won't have to worry about erasures. You can erase easily and quickly because Arkwright Cloths have a smooth, almost smudge-proof surface. And you can ink over erasures neatly because both surface and base cloth are strong enough so they won't wear through. When time is important, choose tracing cloths carefully. Choose Arkwright! Arkwright Finishing Company, Providence, R. I.

Arkwright TRACING CLOTHS

AMERICA'S STANDARD FOR OVER 20 YEARS

▲ Mention Item NED-4113 when writing ▲

In handling these cumbersome frame assemblies, the welders can swing them through 360° and tilt them as far as 135° beyond horizontal. Both men and women welders like Ransome equipment because it steps up their production and reduces fatigue.

6,000-lb. capacity unit.

POSITIONING PERMITS YOUR WELDERS TO CONCENTRATE ON WELDING . . .

It's certainly not good business to waste welders' time and energy in "rasseling" the work around . . . not when a Ransome Positioner will do the job at the touch of a switch.

This equipment improves quality by providing the correct downhand position for every weld, saves valuable floor space, promotes safety, and speeds up welding production generally.

There's a type and size for *your* welding needs . . . in a line that extends from light-duty hand-operated up to 40,000-lb. capacity. » *Write for full information.*

Ransome WELDING POSITIONERS

INDUSTRIAL DIVISION • RANSOME MACHINERY COMPANY • DUNELLEN, NEW JERSEY

▲ Mention Item NED-4114 when writing ▲

To keep production wheels humming by co-operating with the demands of Uncle Sam and industry.

To give as quick a delivery as possible.

To build strong, well-made thermometers for many years of service.

To furnish guaranteed accuracy and a mercury column with a wide RED column for quick reading.

To help you in selecting the right thermometer for your needs.

To do our very best for everyone that we can.

So that we can all enjoy an Early Victory. We ask your co-operation and we pledge ours.

Remember PALMER Thermometers on your next order.

(Catalog No. 300-D sent promptly)

red reading mercury

THE PALMER CO.

MFRS.: INDUSTRIAL, LABORATORY, RECORDING & DIAL THERMOMETERS

2523 NORWOOD AVE., CINCINNATI, NORWOOD, O.

CANADIAN BRANCH: KING AND GEORGE STS., TORONTO

▲ Mention Item NED-4115 when writing ▲

Revolutionary NEW Carbide Tipped Cutter *by Super!*

NEW HIGH EFFICIENCY CUTTER SLASHES MILLING COSTS!

Here's money-saving news for production men! Faster milling with better finishes and greater accuracy . . . . *at lower cost!* That sums up the advantages of this new carbide tipped milling cutter by Super Tool Company.

It's fast! Feeds of .002" to .005" per tooth in cast iron and non-ferrous materials at machine capacity. Surface speeds of 400 to 800 feet per minute with tooth loads of .0005" to .0025" in steel—table feeds of 5" to 18" per minute.

It's accurate! Faster operating speeds mean less cutting pressure with less distortion of work. And the high speed of this cutter produces a fine finish comparable to a ground finish.

It's economical! Initial cost is lower. It produces more and better work—faster. And it is designed to be used for slotting, side milling, face milling or half side milling without alteration.

May we send you a descriptive folder giving prices and full details?

Most sizes available for immediate shipment NOW—others in two to three weeks.

SUPER TOOL CO. 21650 Hoover Road Detroit, Michigan

▲ Mention Item NED-4116 when writing ▲

Count thousands of small parts in a few seconds with Toledo Counting Scales! Easy and *accurate* to operate, whether it's issuing predetermined quantities of uniform parts...counting unknown quantities...providing faster inventory counts. Models for all modern requirements. Write for "Counting by Weight". Toledo Scale Company, Toledo, Ohio.

TOLEDO SCALES

▲ Mention Item NED-4117 when writing ▲

DUSTPROOF FLOOR TREATMENT

Stainless and transparent, Westone liquid floor treatment may be used on wood, cement, tile, terrazzo and other types of floors. It is claimed to prevent floor wear and improve appearance. In addition, floors treated with this material have affinity for dust and floor traffic will not raise dust into air. Product is applied by spraying or mopping and floor is maintained by sweeping it regularly with yarn mop. Made by **West Disinfecting Co.**, Dept. DE, 42-16 West St., Long Island, City, N. Y.

▲ Mention Item NED-4118 when writing ▲

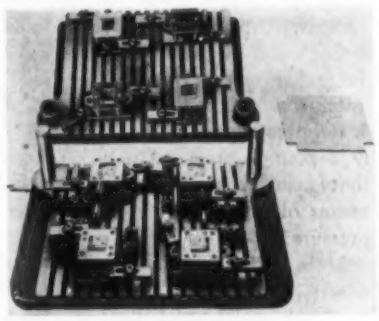
CENTERING TOOL

Accurate centering of round bars preliminary to machining on centers is made possible by Whitcomb Quickcenter. Tool will center round bars from ½ to 3 inches in diameter within 0.005-inch. This device, which can be operated by inexperienced workers, removes centering operation from lathes.

Machine is equipped with ¼-horsepower motor and has speeds of 700, 1300 and 2300 revolutions per minute adjusted by three-step vee-belt sheave. It is operated by placing work on vee-block and turning handwheel until work is held securely between rising vee-block and lowering button. When tight, work is in line with center line of spindle and hand lever advances center drill into work. Operator moves only handwheel and lever. Tool sells for $250.00, f.o.b. factory. Made by **Whitcomb Mfg. Co.**, 480 Eighth St., Troy, N. Y.

▲ Mention Item NED-4119 when writing ▲

ADJUSTABLE NOTCHING DIES



Available as standard units, adjustable notching dies are quickly set up and depth or angle of notches can be varied to suit different jobs by merely changing position of die units. Dies can also be combined with special shapes and standard sizes of square, oblong and round hole adjustable punches and dies for perforations to be made in same press operation. Sheet metal can be readily handled with dies which are available in wide range of sizes and shapes from stock. Made by **S. B. Whistler & Sons, Inc.**, 746 Military Rd., Buffalo, N. Y.

▲ Mention Item NED-4120 when writing ▲

End Costly "Time Out" For Spray Booth Cleaning!

Paasche Self-Cleaning WATER WASH BOOTH

Turns Cleaning Time Into Productive Time

Paint can't stick to water—that's why Paasche Water Wash Booths are clean, safe and healthful. Overspray that usually accumulates on the walls of booth, exhaust fan and ducts, is thoroughly washed from exhausting air and precipitated into a settling tank.

In many cases, the precipitated solids can be reclaimed and important savings effected. Paasche Booths reduce fire hazards . . . are selected where absolute safety is a requisite. Booths are made with water curtain either at back only, or at back and both sides, or at back, both sides and water wash at bottom.

Write today for full information on Paasche Water Wash Booths and other Manual or Automatic Airpainting Equipment.

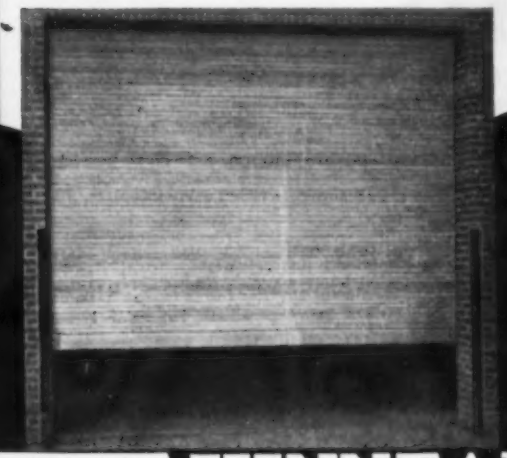
Paasche Airbrush Co.

1949 Diversey Parkway Chicago, Illinois

▲ Mention Item NED-4121 when writing ▲

FOR EFFICIENCY AND FULL WEATHER PROTECTION . . . KINNEAR *Wood* ROLLING DOORS

The wartime alternate for the space-saving efficiency of Kinnear Steel Rolling Doors! Their resistance to the elements is proved by years of actual service! Their inter-lapping wood slat curtain coils compactly overhead, saves floor and wall space! Any size, motor or manual operation. Write for bulletin 37. The Kinnear Manufacturing Company, 3017 Fields Ave., Columbus 16, Ohio.



SAVING WAYS IN DOORWAYS KINNEAR ROLLING DOORS

▲ Mention Item NED-4122 when writing ▲

SIGNODE System of Steel Strapping

Vital Service on the SUPPLY FRONT

Backing up the widespread battlefronts are many supply fronts, and Signode-strapped shipments are reaching all of them. Signode's war job is helping to safeguard war materials shipped to our fighting men.

No matter what your product or your shipping problem may be, Signode package and carloading engineers stand qualified to give you practical shipping suggestions. Signode representatives have already specified, or given constructive advice, on a great many new types of war shipments.

Remember your nearest Signode representative is ready to help assure safe delivery of *your* vital war products.

SIGNODE STEEL STRAPPING CO.
2632 N. Western Ave., Chicago, Ill.
Brooklyn, N. Y.: 378 Furman Street
San Francisco, Calif.: 467 Bryant St.

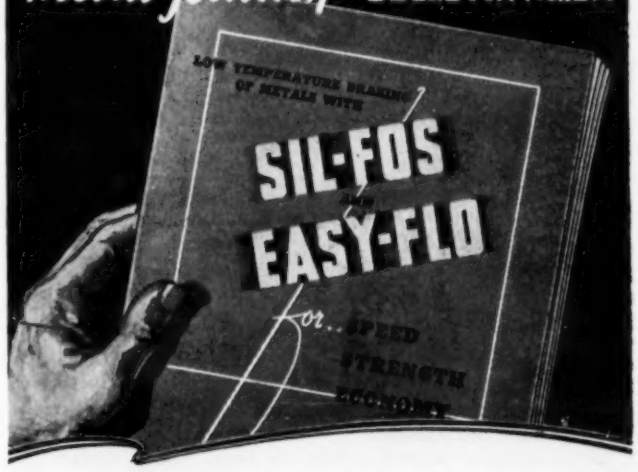
In a busy depot stacking yard, men unload boxes of automobile parts to be reshipped on a railroad built and run by U.S. troops.

SIGNODE

Signode Steel Strapping Meets All Federal Strapping Specifications

▲ Mention Item NED-4123 when writing ▲

Here's your guide to fast, reliable, low-cost metal joining.. BULLETIN No.12-A



This new edition gives you the facts about Sil-Fos and Easy-Flo, the fast-acting, low temperature silver brazing alloys that have revolutionized metal joining operations in many industries and have multiplied production, saved tons of metal, provided superior joints and cut costs on hundreds of jobs in planes, tanks, ships, guns, shells and other war equipment. It tells you *how to put Sil-Fos and Easy-Flo to work in your plant* and contains valuable information on joint designs, heating methods and production increasing procedures.

WRITE FOR YOUR COPY—NOW

HANDY & HARMAN 82 Fulton St., New York 7, N. Y.

Agents in Principal Cities. In Canada: HANDY & HARMAN of Canada, Ltd., Toronto

▲ Mention Item NED-4124 when writing ▲

TOOLS
to build Airplanes

The swarms of airplanes needed to speed the doom of the Axis could never be built nor serviced without *hand tools*—hammers, screw drivers, planes, breast drills, chisels.

Airplane manufacture uses STANLEY TOOLS in tremendous quantities.

TWO VALUABLE REFERENCE BOOKS

New Illustrated Index shows STANLEY TOOLS that meet Government Department Specifications. Approved tools with their specification numbers and regular Stanley Catalog numbers are included. An invaluable aid to buyers.

Stanley Industrial Tool Catalog No. 50 is especially useful reference book for tool buyers . . . a 56-page guide book of the world's best-known tools, fully illustrated . . . 17 complete lines . . . outside indexed for easy use. Keep a copy handy.

1843 STANLEY 1943

STANLEY TOOLS DIVISION OF THE STANLEY WORKS 104 ELM ST., NEW BRITAIN, CONN. *The Tool Box of the World*

▲ Mention Item NED-4126 when writing ▲

It can take it!
TYPE M1 CANNON CONNECTOR

Here's a Cannon Connector that's built extra sturdy and tough . . . to stand up under heavy work. To take a real load, and always deliver.

These four pole plugs and receptacles for power, heavy duty signal and control circuits are approved by the Board of Underwriters for 440 volt A C 30 amp. service. The 5, 6, 7, 8 and 9 pole fittings have 15 amp. capacity.

In the Cannon Catalog Supplement, the full details of M1 series and other generally used Cannon Connectors are set forth in detail. Drop us a line on your business letterhead and we'll gladly send you a copy. Address Dept. A-113, Cannon Electric Development Co., Los Angeles, Calif.

CANNON ELECTRIC

Cannon Electric Development Co., Los Angeles 31, Calif.

Canadian Factory and Engineering Office, Cannon Electric Co., Ltd., Toronto

Representatives in principal cities — Consult your local telephone book

▲ Mention Item NED-4127 when writing ▲

Do it *quicker*...*cleaner*...with
Adhere RIVETING TAPE

FOR HOLDING FLUSH RIVETS IN PLACE

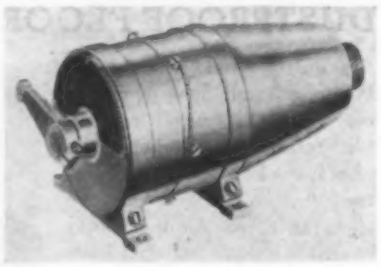
A highly serviceable riveting tape of inexpensive, yet transparent, glassine paper. The edges of the tape are gummed—with just the right adhesive qualities needed to hold the rivets firmly in place . . . yet easily removable. Comes off clean . . . leaves no troublesome adhesive to be wiped off. Write for sample and prices.

Manufacturers of Adhere Spraymask, Ready-to-apply Insignia and Window Masks and Edge-gummed Masking Paper in Rolls . . . and now, Adhere Rivet Tape.

Adhere Inc. 1220 Maple Ave. • Los Angeles, California

▲ Mention Item NED-4128 when writing ▲

AIRCRAFT CONTROL MOTORS



Used for aircraft service in control of dampers; governing cabin temperatures, flow of air through superchargers or intercooling equipment, and engine cowl flaps, these control motors are designed for low temperature, high altitude operation. They may also be used to drive valve mechanisms on fuel and other fluid lines.

Housed in aluminum case, motor is fitted with machine cut gears. Totally enclosed limit switches are set for 90 or 180-degree rotation. They are available with or without mounting brackets, and with AN-type connector plug. Motors are made for positive, floating or proportioning control, or for step control by manual or automatic means, and for remote position indication. Torque ranges from 50 to 500 inch-pounds. Made by **Barber-Colman Co.**, 230 Loomis St., Rockford, Ill.

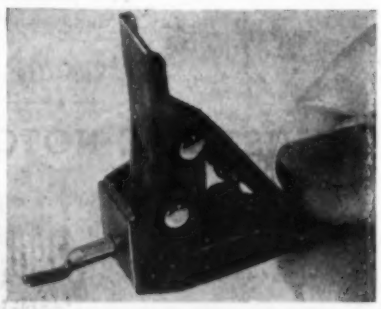
▲ Mention Item NED-4129 when writing ▲

STENCIL CUTTING MACHINE

Stencils may be produced quickly and easily on Marsh stencil machines. These stencils may be used to mark shipments, parts, stock bins and similar applications. Even inexperienced women operators are able to cut stencils, because of direct finding feature in selecting characters to be cut. Finger tip control is convenient to operate. Machines are made to cut ½, ¾ and 1-inch characters in accordance with government specifications. Made by **Marsh Stencil Machine Co.**, 23 Marsh Bldg., Belleville, Ill.

▲ Mention Item NED-4130 when writing ▲

SKIN FASTENER



Specially designed for use by women workers, this skin fastener locks with finger-tip pressure and can be used for both flush and countersunk rivet applications. Applied with either hand by pressing large lever between thumb and forefinger, it requires approximately 8 pounds pressure to lock. Toggle trigger is arranged so that fastener cannot loosen or fall off job. Removal by means of pressure on thumb trigger requires about 6 pounds pressure.

Main part is torsion spring made of hot drawn oil-tempered wire. Spring exerts direct pull of 35 pounds at point of contact with skin. Stock sizes are for 3/32-inch and ⅛-inch rivet holes. Made by **Clever Tools Co.**, 10918 West Pico Blvd., Los Angeles, Calif.

▲ Mention Item NED-4131 when writing ▲

JONES BARRIER STRIPS

No. 2-151

Solve Most Terminal Problems

• A compact sturdy terminal strip with Bakelite Barriers that provide maximum metal to metal spacing. Prevent direct shorts from frayed wires at terminals.

6 SIZES—Cover every requirement. From 3/4" wide and 13/32" high with 5-40 screws to 2-1/2" wide and 1-1/8" high with 1/4"-28 screws. Jones Barrier Strips will simplify as well as improve the electrical connections of your products.

Three lines of Jones Multi-Circuit Plugs and Sockets fulfill every connection requirement. Hundreds of standard terminals.

Write today for catalog listing complete line of Jones Electrical Connecting Devices.

HOWARD B. JONES
2304 WABANSIA AVE., CHICAGO

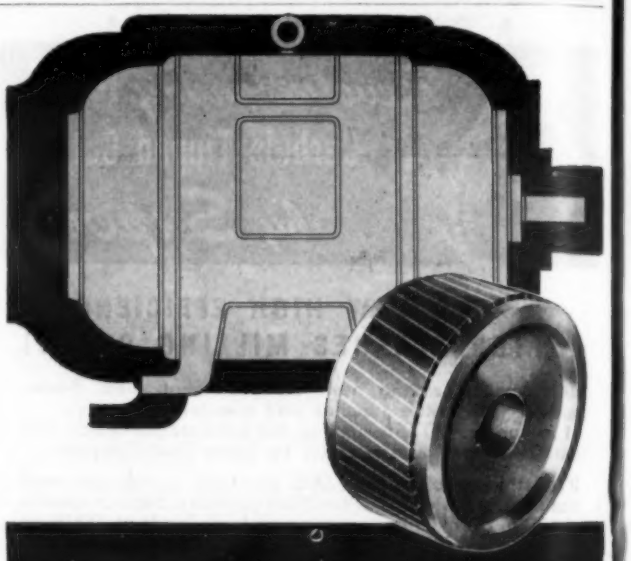
▲ Mention Item NED-4132 when writing ▲

IMPROVED MODEL McCORD UNIT HEATER

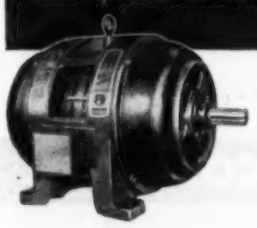
The new improved McCord Unit Heater incorporates every unit heater advancement that McCord engineers and the experience of thousands of users could suggest. The distinctive modern design with rounded corners combines improved appearance with greater strength and houses an all copper heating unit that sets a new standard of heat transfer efficiency and quietness. The scientific design of the individual all copper turbo spiral fin tube core provides even distribution of heated air at high velocity. The individual tubes prevent stresses due to unequal expansion. The entire heating unit is spring suspended and floats free in the casing, eliminating rigid connections. Deep pitched fans provide high air delivery and quietness of operation.

This improved heater is a development of the experience gained from the thousands of McCord Unit Heaters in service. It combines good appearance with that inherent McCord quality of ruggedness and dependability that has made McCord the standard among many of the largest industrial users. You may also replace old leaking heaters using new McCord units and your old fan and motor. Write for new catalogs—Unit heaters and blast coil units. **McCord Radiator & Mfg. Co.**, 2580 E. Grand Blvd., Detroit, Mich. —Advt.

▲ Mention Item NED-4133 when writing ▲



Don't Worry about the Ban on Oversize Motors . . .



LOAD F-M MOTORS TO FULL CAPACITY!

Specify Fairbanks-Morse Motors with *Copperspun* Rotors and you don't need extra size and horsepower to protect against overloads. That saves money for you and releases critical materials for planes, guns, ships, and tanks!

The winding of the *Copperspun* Rotor is centrifugally cast of COPPER in one piece. It provides electrical and thermal characteristics that give this motor the stamina to stand up under the most severe service without mechanical failure. You can operate a Fairbanks-Morse Motor with *Copperspun* Rotor at its full rated capacity continuously and indefinitely without fear of damage from overloading.

Fairbanks, Morse & Co., 600 S. Michigan Ave., Chicago, Illinois.

FAIRBANKS-MORSE

DIESEL ENGINES · PUMPS · MOTORS · GENERATORS · SCALES · WATER SYSTEMS · FARM EQUIPMENT · STOKERS · AIR CONDITIONERS · RAILROAD EQUIPMENT

Motors

▲ Mention Item NED-4134 when writing ▲

HARNESSING VIBRATION

ON AUSTIN-WESTERN "99" POWER GRADERS

Austin-Western "99" Power Graders are subjected to terrific vibration and stresses. To keep structural assemblies tight, nuts and bolts are securely locked with Double Locking PALNUTS.

PALNUTS are single thread, tempered spring steel locknuts, easily, speedily applied on top of regular nuts. They require only 3 bolt threads space, are light in weight, low in cost, may be re-used, are interchangeable with other approved locking devices. For over 15 years, PALNUTS have proved their unfailing double-locking action on peacetime and war equipment of all kinds. Sizes for all standard bolt threads. Send details of fastening problems for samples and copy of Palnut Manual No. 1.

THE PALNUT COMPANY

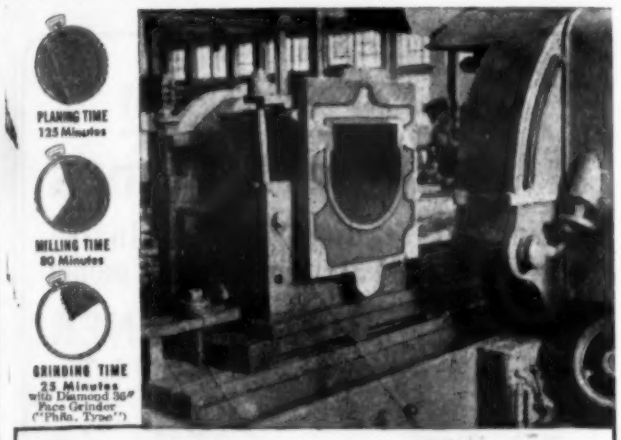
43 Cordier St. Irvington, N. J.

DOUBLE-LOCKING PALNUTS

▲ Mention Item NED-4135 when writing ▲

ATTENTION, WAR PRODUCERS

Compare these times for surfacing two parallel faces of a 17" x 19½" casting



Want to cut down the time for surfacing heavy machine parts to ⅓ or less? It can be done. Here, a 17"x 19½" casting was surfaced two sides parallel in only 25 minutes with a Diamond 36" Face Grinder*—("Philadelphia Type"), using a rotating fixture with a quick-acting clamp—just *one* set-up.

Remember, the Diamond Face Grinder requires no previous skill or knowledge. It is so easy to use, green hands can be trained in a few days to a few weeks. Write today for full details. *Wheel Size—36" Diameter

DIAMOND MACHINE COMPANY OF PHILADELPHIA

2479 Aramingo Avenue, Philadelphia, Pa.

Subsidiary of American Engineering Company, builders of fine machinery for over 75 years, and manufacturers of Taylor Stokers, Marine Deck Auxiliaries, Lo-Hed Hoists, Hele-Shaw Fluid Power.

▲ Mention Item NED-4136 when writing ▲

NO ABSENTEEISM WITH LIMA'S

LIMA GEARSHIFT DRIVES for machine tools and other production equipment reduces "absenteeism" of machines and operators to a minimum.

Lima's simplified design, sturdy construction assures fast, smooth, accurate operations hour after hour, day after day, with less maintenance attention and with less operator fatigue.

Lima's are safe... it is not necessary for the operator to touch the belt at any time in changing or making new machine set-ups.

The Lima line also includes Pedestal Grinders, Magnetic Polishing Lathes and Electric Motors.

Wire or write for address of Lima Engineering Service nearest you.

Large enough to successfully serve you, yet small enough to give personal attention to your needs.

THE LIMA ELECTRIC MOTOR CO.

363 FINDLAY ROAD

LIMA, OHIO

REPRESENTATION IN MOST PRINCIPAL CITIES

LIMA GEARSHIFT DRIVES - LIMA ELECTRIC MOTORS

LIMA MAGNETIC POLISHING LATHES - LIMA PEDESTAL GRINDERS

▲ Mention Item NED-4137 when writing ▲

INTERCOMMUNICATION PHONE

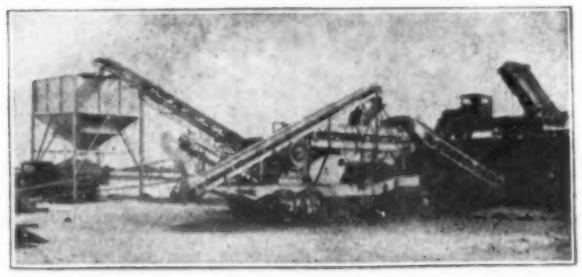
Small size and light weight make this Ranger model 404 interphone useful on noisy factory assembly lines for two-way communication between workers. Device was developed originally for communication between pilot instructors and their students. Between two persons is single cord, of any desired length, for one-way communication, or two such cords for two-way service. Only one interphone amplifier case is required for two way operations.

Entire unit, which weighs only 2 pounds, 10 ounces complete with tubes, batteries and belts, can be carried on waist belt with strap over shoulder. Throat type microphone frees worker's hands. Conventional headphones complete equipment. Volume is adjusted by combination "on-off" switch and volume rheostat, with separate "on-off" switch so that when not needed for communication volume can be left at desired level. Audio output of 180 milliwatts is available. Made by **Electronic Specialty Co.**, Dept. NED, 3456 Glendale Blvd., Los Angeles, Calif.

▲ Mention Item NED-4138 when writing ▲

PORTABLE ROCK SIZING PLANT

Producing up to 200 tons of aggregate per hour, this "Morok" portable rock crushing plant can be set up and put into operation, or knocked down ready to travel in three to



four hours. Made up of five units which can be handled on trucks, assembly consists of primary crushing plant, secondary crushing plant, sizing screen and bin, control panel and power unit.

Material is handled in continuous flow from quarried rock to delivery trucks. From steel flight apron of heavy-duty rock feeder, rock is carried into primary jaw crusher which will receive any rock that can pass through 2 cubic yard shovel dipper. Clutch control provides steady flow of rock and eliminates possibility of crusher choke-off.

Material is then conveyed to 4 x 12-foot double deck horizontal vibrating screen. Largest oversize material is fed to secondary roller bearing jaw crusher and next oversize to roller crusher. Tailings of these crushers are returned to screen for grading.

From secondary plant, material moves to bin unit where second screen does final grading. A 40-yard two compartment bin temporarily stores and delivers aggregate to trucks. Plant may be driven by electricity, combination of diesel and electric power, or by diesel power only. Made by **Iowa Mfg. Co.**, Cedar Rapids, Iowa.

▲ Mention Item NED-4139 when writing ▲

Blueprint of tomorrow's better world...

...being planned today by

Unitcast Research

Out of the grim proving ground of War... will come new materials and new products with far-reaching applications in tomorrow's Peacetime. Looking ahead... Unitcast Engineering today is planning to help make tomorrow's products better with *better Unitcastings!* Of course, until Victory our entire production is geared to war needs.

Unitcast Corporation, Toledo, Ohio

UNITCAST CORPORATION ALLOY AND CARBON ELECTRIC STEEL CASTINGS

▲ Mention Item NED-4140 when writing ▲

CYLINDER CONTROL

VALVES

Stay Tight—Never Stick

Actually Improve with Use!

Made in two, three and four-way types for operating air, oil, water and steam cylinders. Pressures to 300 lbs. Non-corrosive metals used for all vital parts. Guards against costly leakage—gives long, trouble-free service.

Write for Valve Catalog No. 140

The complete Nicholson line includes foot, solenoid, hydraulic and motor-operated valves.

W. H. NICHOLSON & CO.

162 OREGON ST., WILKES-BARRE, PA.

Piston and Weight-Operated, Compressed Air and Gasoline Traps; Steel and Stainless Steel Floats; Flexible and Compression Shaft Couplings; 2-3-&-4-Way Valves; Expanding Mandrels; Arbor Presses; Steam Eliminators and Separators.

▲ Mention Item NED-4141 when writing ▲

Safe Magnesium Dust Control

WITH ROTO-CLONE TYPE N

To meet all requirements of safe handling of magnesium dusts AAf has developed the type N ROTO-CLONE which precipitates the dust under liquid and stores it as sludge. Available as large and small units for collection of dust at individual stands or for service with central system exhaust.

BUY WAR BONDS

If you have a magnesium dust problem write for ROTO-CLONE Bulletin No. 277, which will be sent without obligation.

AMERICAN AIR FILTER CO., INC.

INCORPORATED

391 CENTRAL AVE. LOUISVILLE, KENTUCKY

IN CANADA, DARLING BROTHERS, LIMITED, MONTREAL, P. Q.

▲ Mention Item NED-4142 when writing ▲

AN *All-Electric* ADJUSTABLE-SPEED DRIVE

FOR A-C. CIRCUITS

SPEED RANGES up to 16 to 1 SIZES 1 TO 30 hp.

SPEED CHANGES. Speed adjusted smoothly over a wide range while machine is in operation.

QUICK STOPPING. Obtained electrically from speed adjuster handle or stop button.

SLOW FOR THREADING and INCHING. Safe for setting-up and for close inspection in process.

SMOOTH ACCELERATION. No clutches. Smooth acceleration and deceleration to protect light material in motion.

ALSO: A direct space-saving drive; speed-control convenience without limitations; reversing; start and stop without interfering with speed setting; ample starting torque.

Send for your copy of Bulletin 311 — FREE

RELIANCE ELECTRIC & ENGINEERING CO.

1088 IVANHOE ROAD CLEVELAND, OHIO

Sales Offices in Principal Cities

▲ Mention Item NED-4143 when writing ▲

TYPE 10 and 14 FEATURE THE NEW PATENTED

NO SPRAY
NO SPLASH
WHEEL GUARDS

Hammond OF KALAMAZOO
CARBIDE TOOL GRINDERS
MODELS 4, 6, 10, 14, 20

"You're Dry when you grind Wet"

Guards are concealed, easily accessible, maximum light and operation freedom around the wheels.

WRITE FOR BULLETIN 201

Other Hammond Grinders: "4" Combination Chipbreaker and Grinder; 6, 10A, and 20S Carbide Tool Grinders.

Hammond Machinery Builders INC.
KALAMAZOO • MICHIGAN

MODEL 14W "WET"

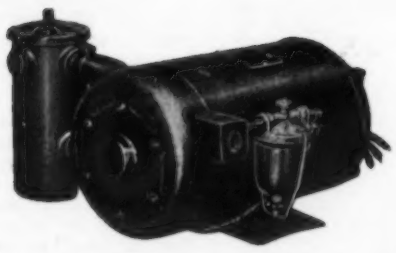
Eastern Branch
71 West 23rd Street
New York 10, N.Y.

1623 DOUGLAS AVENUE

▲ Mention Item NED-4144 when writing ▲

COMPACT PRESSURE or VACUUM PUMP . . . .

NO GEARS
NO DRIVES
NO GUARDS
NO BELTS



Free air volume up to 35 cu. ft. per minute

Vacuum up to 25 inches of mercury.

MOTOAIR

Motor and Pump in ONE integral unit, with visible automatic lubrication.

Less PARTS means LESS WEAR. Sturdily built; for War and Industrial requirements.

NEW JERSEY MACHINE CORPORATION
16th St. at Clinton Ave., HOBOKEN, N. J.

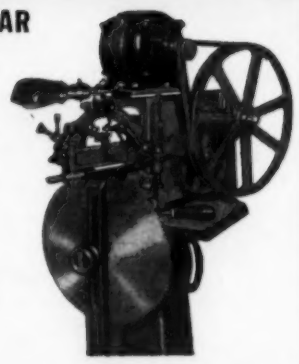
▲ Mention Item NED-4145 when writing ▲

THIS ONE MACHINE Does 3 Things

files CIRCULAR SAWS

files BAND SAWS

files HAND SAWS



FILING SAWS FOR VICTORY—The Foley Filer is in use by U. S. Navy for shipyards, air bases, battleships, navy tenders—by U. S. Army posts and airports—by U. S. Engineers, Light House Dept., Treasury, Mint, Federal penitentiaries,—also hundreds of war and industrial plants.

The Foley Filer is the only machine that sharpens cross-cut circular saws 3" to 24" in diameter, band saws 1/8" to 4-1/2" wide—all hand saws. Your saws will cut faster and truer and stay sharp longer when filed on a Foley Saw Filer. The exclusive patented Foley jointing principle straightens up uneven teeth and makes them perfect in size, shape, spacing. That is why Foley-filed saws increase sawing production 25% to 40%. The Foley also cuts down filing time, saves on files and reduces saw breakage.

30-DAY TRIAL OFFER

Find out on your own work how much the Foley Filer can save you. We will send it on thirty days' trial. Send for [illegible]

FOLEY AUTOMATIC SAW FILER

FOLEY MFG. CO., 23 Second St. N. E., Minneapolis 13, Minn.
Send full details of your 30-day Trial Offer on the Foley Automatic Saw Filer

Name .....

Address .....

▲ Mention Item NED-4146 when writing ▲

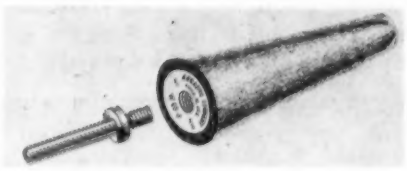
LIGHT HOISTS

Enabling women to perform jobs involving lifting of heavy materials, Cablemaster lightweight cable hoists may be installed at each machine tool or bench, eliminating waiting for general overhead hoist. Three sizes are available in 250, 500 and 1000-pound capacities. Each is especially designed for its rating. Model illustrated has 250-pound capacity, is equipped with hook or trolley mounting and is quickly attached to present monorail mounting or to special 4-foot jib crane as shown.

Features of these hoists are anti-friction bearings throughout, random wind drum, self-locking worm gear drive, reduction gears bathed in oil and lower hook ball bearing mounted with ball bearing sheave. Made by Industrial Equipment Div., **The Master Electric Co.**, 100 Davis Ave, Dayton, O.

▲ Mention Item **NED-4147** when writing ▲

ABRASIVE POINTS



Supplied with demountable spindles, Victory abrasive points are claimed to conserve steel. Demountable spindle can be removed from worn point and used again on new points. Points consist of threaded porcelain bushing inserted in and fused to abrasive wheel mass. Spindle screws into this bushing to form tight fit which will not break off, pull out, twist or turn.

Points are made in standard grain and grade combinations in vitrified bonded wheels or points. Demountable spindle size is limited to ¾-inch diameter by 1¼-inch length. Made by **Abrasive Co.**, James & Fraley Sts., Philadelphia 37, Pa.

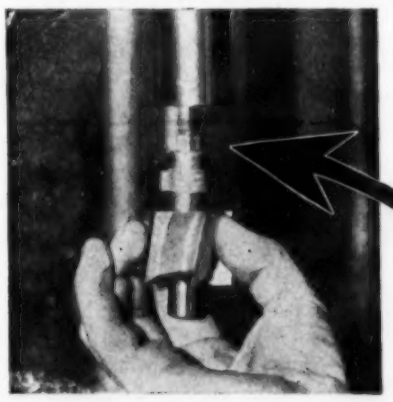
▲ Mention Item **NED-4148** when writing ▲

CARD FILES

Economy of motion is major consideration in design in this line of Wheeldex cabinets which are fitted with selector lever. This device facilitates turning of wheel type card file and yet does not interfere with operator's direct vision to card or her hand movement.

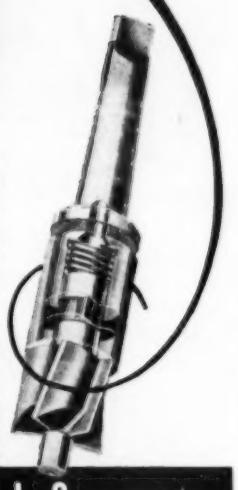
This lever is optional equipment for standard file unit and is suggested only for applications where extra large cards or large wheels are used. Any desired section of file may be brought into proper working position readily with lever. Made by **Wheeldex Manufacturing Co.**, 115 Water St., New York, N. Y.

▲ Mention Item **NED-4149** when writing ▲



RAPID WORK AND QUICK CHANGE WITH Continental Counterbores

You can reduce your tool cost, improve accuracy, and increase production with the Continental complete line of standard interchangeable cutting tools. Cutters have a balanced, indestructible drive—originated by Continental—that will not stick nor break, and is hand detachable.



EX-CELL-O CORPORATION
DETROIT, MICHIGAN

XLO EX-CELL-O for PRECISION

EX-CELL-O Precision MACHINES AND TOOLS

▲ Mention Item NED-4150 when writing ▲

DIAMONDS for Victory

BIG-HED-NIBS
LOC-KEY-SET

• Three grades of diamonds. Common Quality $12 per karat. Medium quality $24 per karat. Select quality $48 per karat. (Contour template diamonds supplied only in Medium and Select quality.)

All diamond sizes ¼ to 10 karat are nib mounted for immediate shipment . . . Billed subject to approval. Specify quality of diamond wanted. We recommend a minimum size of one karat for each 6" diameter of grinding wheel. (24 hour resetting service, $1.00 post paid.) Grinders instruction card free.

RE-SET-ABLE

Cooler dressing
Closer Tolerances
Micrometer Accuracy

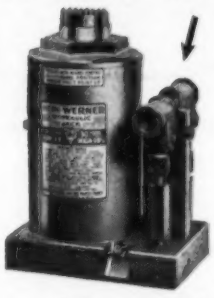
Because: Wing key heat dissipation and absolute diamond lock nib.

The Most Complete and Up-to-the-Minute Line of Diamond Tools for War Production. Send for Free Catalog.

DIAMOND TOOL COMPANY, Not Inc.
Sheldon M. Booth, Pres.
940 E. 41st Street CHICAGO, ILL.

▲ Mention Item NED-4151 when writing ▲

Dual Operation of Two Speed Pumps is an outstanding and exclusive feature of this 30 ton capacity model



HEIN-WERNER HYDRAULIC JACK

• Super-Powerful
• Easy-Operating

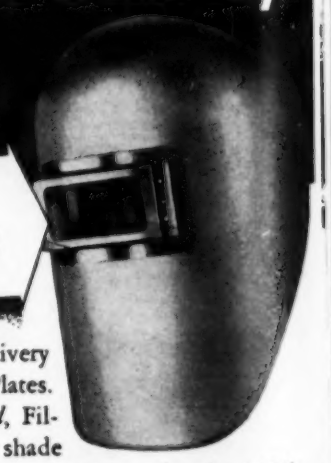
Available for quick delivery to plants doing war work . . . Other models 3 to 20 tons capacity. For details consult your nearest industrial supply distributor or write us.

HEIN-WERNER MOTOR PARTS CORP.
Waukesha, Wisconsin

HEIN-WERNER HYDRAULIC JACKS
Are Built Right and Priced Right

▲ Mention Item NED-4152 when writing ▲

Immediate Delivery on



FILTERWELD WELDING PLATES

You get immediate delivery of Filterweld Welding Plates. Completely *service-proved*, Filterweld is available in shade numbers 8, 9, 10, 11, 12, and 13 . . . absorbs 100% of the ultra-violet rays and more than 99% of the dangerous infra-red rays. Order from your nearest AO Branch Office today.

American Optical COMPANY
SOUTHBRIDGE, MASSACHUSETTS

▲ Mention Item NED-4153 when writing ▲

4 REASONS why you can make B&S Cams faster from SYNTHANE CAM BLANKS

AND EASY TO MACHINE

Synthane cam blanks are nonmetallic, easy to bandsaw and finish with filer or simple finishing equipment. Practical for short runs because so little time is required for set-up.

SIZE 00	SIZE 0	SIZE 2
$4.00	$5.25	$6.75
SET OF 3	SET OF 3	SET OF 3

Prices subject to change without notice
STATE SIZE AND NUMBER OF SETS WANTED
A high preference rating is necessary

SYNTHANE CORPORATION • N. E. RIVER ROAD • OAKS, PA.

SHEETS · RODS · TUBES · FABRICATED PARTS
SYNTHANE
Bakelite — Laminated
TECHNICAL PLASTICS
MOLDED · LAMINATED · MOLDED · MACERATED

▲ Mention Item NED-4154 when writing ▲

TARE WEIGHT REDUCED with GENERAL BOXES

Engineered General Boxes are designed in the laboratory to give maximum protection with a minimum amount of tare weight. Wire stitched and bound, they assure the strength of steel . . . provide the extra stamina required to stand up under today's overland and overseas travel. Then, too, they conserve vital space in ships, trucks, trains and on the shipping room floor. Write today for full details.

For manufacturers of war products: General Heavy Duty Wirebound and Nailed Wooden BOXES and CRATES.

Where availability of materials permits: Corrugated BOXES and Wooden Cleated Fibreboard CRATES and Generalite and Nailed Strapped Beverage CASES for domestic service.

GENERAL BOX COMPANY

General Offices:
Corner of Dearborn & Ill. Sts., Chicago, Illinois
District Offices and Plants: Brooklyn, Cincinnati, Detroit, East St. Louis, Kansas City, Louisville, Milwaukee, New Orleans, Sheboygan, Winchendon; Continental Box Company, Inc.: Houston, Dallas.

▲ Mention Item NED-4155 when writing ▲

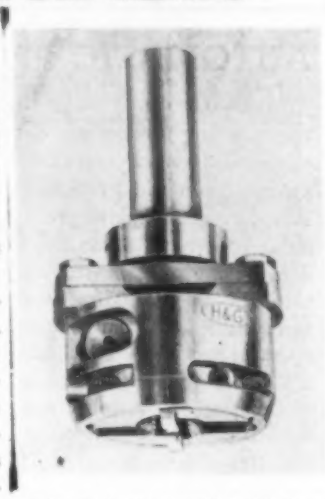
And that way is to *know* the tension . . . accurately . . . as the nut is tightened. In many operations "guesswork" tightening can cause endless trouble. Snap-on Torqometers make precision tensioning as simple as reading a dial. Their use insures predetermined accuracy on fine assembly work, and prevents mechanical distortion in cylinder heads, bearings, steam flanges and transmission systems. As easy to use as an ordinary wrench.

Snap-on Torqometers are available in a wide range of capacities, from 150 in. lbs. to 2,000 ft. lbs. Full information available on request. Write —

SNAP-ON TOOLS CORPORATION
8042-H 28th Avenue
KENOSHA, WIS.

▲ Mention Item NED-4156 when writing ▲

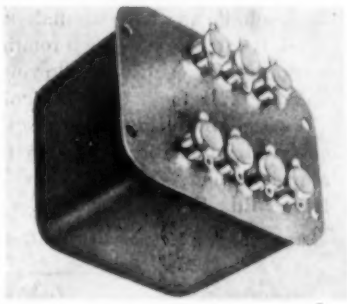
INSERT CHASER DIE HEADS



Using same type insert chasers as are used in self-opening die heads, this style SAML solid adjustable insert chaser die head is designed for use on all sizes of Brown & Sharpe automatic screw machines. Heads are furnished complete with holders and have alignment feature to permit correction of misalignment of turret spindle. Tools are made of high speed steel and are claimed to produce from four to ten times as many pieces as can be obtained from solid dies. Chasers are easily removed for regrinding. When dies are once adjusted, they will hold their size. Made by **The Eastern Machine Screw Corp.**, Dept. G., Truman and Barclay Sts., New Haven, Conn.

▲ Mention Item NED-4157 when writing ▲

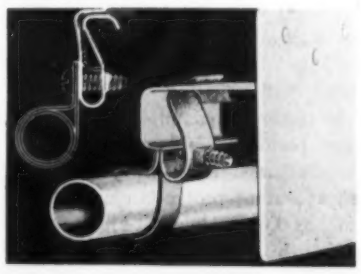
ELECTRICAL TRANSFORMER



Moisture and dustproof, this electrical transformer meets all Navy specifications for hermetic sealing. Glass or porcelain insulators with metal bands are used. These insulators are soldered into transformer case which is cold drawn copper-plated steel and thus become integral part of case. Vac-sealing impregnation process is used, insuring impregnation without solvents or other deleterious material being present inside coil. This is accomplished through use of special type of impregnant that cures completely under heat. Transformers can be produced in any desired size or capacity to customer's specifications. Made by **Peerless Electrical Products**, 6920 McKinley Ave., Los Angeles 1, Calif.

▲ Mention Item NED-4158 when writing ▲

AIRCRAFT FASTENING



Developed for rapid assembly of conduit, piping and wire harnesses in aircraft, Speed Nut No. 6337 is made of aircraft spring steel with zinc metal spray finish. It snaps around rolled sections or stringers and eliminates need of drilling holes which weaken structure. As screw is tightened in nut, legs are forced inward to give firm spring tension grip. Fastener is made for 8Z and 10Z sheet metal screws and is for use on various sizes of Z stringers. Made by **Tinnerman Products Inc.**, 2044 Fulton Rd., Cleveland, O.

▲ Mention Item NED-4159 when writing ▲

Motors are as stubborn as a mule. They won't stop when dangerously overloaded, and the first thing you know you have a burnt out motor on your hands. That's not so with motors that have built-in Klixon Protectors. For a Klixon Protector . . . while allowing the motor to produce maximum output . . . stops the motor when it gets dangerously hot. It thereby prevents burn-outs . . . keeps motors out of trouble.

Eliminate the expense, the delays, the production slow down and the fire hazards that go with motor burn-out. Specify motors *with built-in Klixon Protectors* . . . AC, all sizes; DC up to 30 volts.

KLIXON

SPENCER THERMOSTAT CO., ATTLEBORO, MASSACHUSETTS

▲ Mention Item NED-4160 when writing ▲

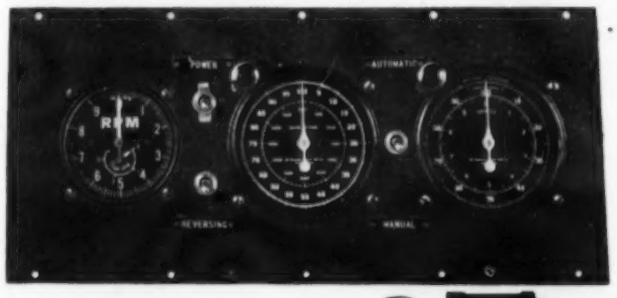
Hanna AIR & HYDRAULIC Cylinders

ON 1001 jobs Hanna Cylinders simplify and improve operations—save time and labor—help increase production.
Where can you make use of Hanna Cylinder Power as suggested in these illustrations? Write for the brand-new Hanna Catalog, No. 233.

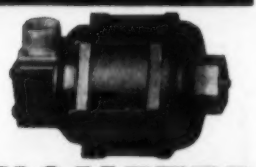
HANNA ENGINEERING WORKS
1765 ELSTON AVENUE • CHICAGO, ILLINOIS
RIVETERS • CYLINDERS • AIR HOISTS

▲ Mention Item NED-4161 when writing ▲

ANOTHER ACHIEVEMENT IN *Accuracy* BY STANDARD ELECTRIC TIME



TYPE SG (SELF GENERATING) CHRONOTACHOMETER



This new chronotachometer fills the need for a versatile and extremely accurate instrument for measuring speed and integrating revolutions and determining the fuel power, oil circulation, and developed horsepower of aircraft and other engines.

ITS FEATURES INCLUDE

an electric drive; a conveniently-mounted 3-phase generator providing positive indication for either direction of rotation; a 3-conductor cable between generator and two 3-phase receiving motors, which drive the tachometer and revolution counter units. The tachometer is a flight instrument of the sensitive type.

THE ACCURACY

of the new chronotachometer is as follows: Timer; to within .001 minutes per test run. Revolution Counter; to within ½ revolution per test run. Tachometer; to within 10 RPM throughout the scale range. Thus extreme accuracy of speed measurement may be obtained by prolonged integration of time and revolutions.

Automatic 1/10th minute integration (Rapid Speed Check) is included.

Address NED-9

THE STANDARD ELECTRIC TIME CO.
"Split-Second Measurement by Standard"
SPRINGFIELD, MASSACHUSETTS

▲ Mention Item NED-4162 when writing ▲

Detroit PNEUMATIC HOISTS

QUICK DELIVERIES CAN BE MADE

DETROIT, GEARED PNEUMATIC HOISTS can be used wherever compressed air is available. They perform the same as electric hoists except they are operated by an air motor; no electrical equipment is involved.

DETROIT, GEARED PNEUMATIC HOISTS are rugged . . . will stand hard use. There are no delicate or electrical parts to maintain. They are especially suited to hazardous surroundings — gun powder, paint, chemical and similar processes. They are made in capacities from ½ to 10 tons.

GEARED PNEUMATIC HOIST with I-beam trolley suspension, — also made with upper hook suspension.

GEARED PNEUMATIC MOTOR This type of air motor is used on the hoists — also available as separate power units. They will run on 50 to 100 lbs. pressure, air or steam.

DETROIT HOIST & MACHINE CO.

Engineers, Designers & Manufacturers of Pneumatic and Electric Hoists for more than 37 years.

8208 MORROW STREET • DETROIT 11, MICH.

▲ Mention Item NED-4164 when writing ▲

SNAP GAGES?

We Can Ship Today!

Sheffield has a complete stock of AGD Adjustable Snap Gages in all models and in all ranges — for immediate shipment.

Every one of these gages has been made to Sheffield's high standards of quality in both materials and precision workmanship.

When Ordering, Be Sure to Give All the Following Information:

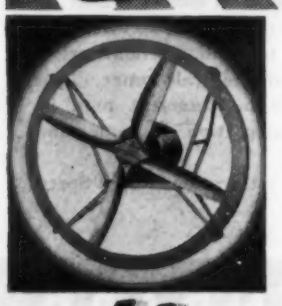
State Frame Model and Frame Size. Stipulate whether gage is to be set and sealed (allow additional day on orders for set and sealed gages). Give complete marking instructions if set and sealed.

FOR SPECIFICATIONS SEE SHEFFIELD HANDBOOK No. 42-2 PAGES 150-153

THE SHEFFIELD CORPORATION
DAYTON, OHIO, U. S. A.

▲ Mention Item NED-4165 when writing ▲

If you're in industry you need HARTZELL FANS



Look into a plant that is breaking production records and you'll find that it is an efficiently ventilated plant. You'll find that it doesn't tolerate "hot spots" around production machines. It cools and dries products in a hurry. It puts air to work *for* production, not *against* it. We've applied simple, practical, trouble-free fan-and-blower solutions to such problems for 17 years. What's *your* air-moving problem?

Hartzell PROPELLER FAN CO.

DIVISION OF CASTLE HILLS CORP., PIQUA, OHIO

VENTILATION HEADQUARTERS

SALES-ENGINEERING OFFICES IN PRINCIPAL CITIES

AUTOMATIC PROFILE MILLER

Irregularly contoured parts required for production jobs are quickly and accurately produced on this relatively inexpensive automatic profile milling machine. Machine does not need to be stopped for loading or unloading work and automatic action relieves operator fatigue. Close limits are obtained because of direct method of control of machined pieces.

Cutter spindle, mounted on precision Timken bearings within quill, is carried on head of machine. Quill has silent chain drive and hardened helical change gears which run in oil. Vertical adjustment of 6 inches is possible. Head is adjustable to within 0.001 inch in positioning for work.

Spindle nose has standard No. 40 taper. Selective speeds for spindle range from 127 to 3435 revolutions per minute. Both spindle and table are independently driven and controlled. Work is carried on 14-inch rotating table which is hydraulically controlled by cam and following mechanism. Ground center hole in table facilitates positioning of work holding fixtures.

Two adjustable program discs determine rapid indexing cycles and automatic table stop to meet requirements of wide range of work. Made by Earl A. Thompson Mfg. Co., 1302 Hilton Rd., Ferndale, Mich.

▲ Mention Item NED-4167 when writing ▲

ELECTRIC MOTOR STARTER

Designed for low first cost, Type H motor starter is metal-enclosed structure similar to metal-clad switchgear. Disconnecting-type fuses of high interrupting capacity are used in combination with heavy duty oil switch. Starters are available for both induction and synchronous type motors rated up to 1000 horsepower at 2300 volts and 1750 horsepower at 4600 volts, 3-phase, 50 or 60 cycle current.

Standard applications include full or reduced voltage starting, dynamic braking, reversing and special applications. They provide short circuit protection up to 160,000 kilovolt-amperes at 2300 volts and 320,000 kilovolt-amperes at 4600 volts. No back-up breaker is required within these ratings. Fuses operate only under actual short circuit conditions and will not blow unnecessarily. Starters protect motors from sustained overloads, locked rotor condition, single phasing and overloading caused by too frequent starting by means of thermal overload relay which is accurately calibrated. Made by Allis-Chalmers Mfg. Co., 6900 Norman St., Milwaukee, Wis.

▲ Mention Item NED-4168 when writing ▲

Alnor PYRO-LANCE

THE RELIABLE FOUNDRY PYROMETER

The *Alnor* portable Pyro-Lance is a rugged, durable, portable pyrometer built with shock-resisting movement and enclosed extension thermo-couple. It stands up in foundry service and gives the accurate temperature readings essential to low-cost production of sound castings. Especially suited for use on molten brass, bronze, copper, aluminum bronze, magnesium alloys, and similar metals where temperatures are not over 2300 F. Long life, enclosed thermo-couple takes true readings below the surface, unaffected by dross or surface conditions.

Built in standard range, 0-2500 F. Also with bare wire thermo-couple for low temperature metals in crucibles or ladles. Write for bulletins giving complete description.

Illinois Testing Laboratories Inc.

430 NORTH LA SALLE STREET • CHICAGO, ILLINOIS

HANDLE MORE PAY LOAD WITH LESS CRANE TIME

Blaw-Knox BUCKETS

Send for the catalog which describes the bucket you need—

- No. 1586—Blaw-Knox Concrete Buckets.
- No. 1606—Blaw-Knox Buckets for Contractors.
- No. 1696—Blaw-Knox Buckets for Single Drum Hoists for use on Railroads, Mills, Foundries, Etc.
- No. 1745—Blaw-Knox Buckets for "Burtoning" Handling Nitrates, Grain, Potash, Etc.
- No. 1757—Blaw-Knox 2 Line Lever Arm Buckets for Rehandling, Barge Cleanup, General Purpose, Hard Digging, Dredging.
- No. 1865—Blaw-Knox 4 Rope Buckets for Coal, Ore and Cleanup.

HEADQUARTERS FOR CLAMSHELL BUCKETS

Blaw-Knox buckets offer to industry the widest possible range of types and capacities specialized in application for the job; for excavating, rehandling, dredging, steel mill service, etc., in a word, for anything that can be handled profitably by a clamshell.

Blaw-Knox buckets are illustrated and described in great detail with dimensions and capacities in Blaw-Knox Bucket Catalogs which show how to select the exactly right bucket for your job. Write to

BLAW-KNOX DIVISION of Blaw-Knox Co.

2068 FARMERS BANK BUILDING, PITTSBURGH, PA.

NEW YORK · CHICAGO · PHILADELPHIA · BIRMINGHAM · WASHINGTON

▲ Mention Item NED-4170 when writing ▲

Downs CRANE WHEELS

Downs Crane Wheels are furnished in Pin and Keeper, Plain and Live Shaft types in tread diameters from 7½" to 24" inclusive. Wheel load capacities to suit any condition. Full roller bearing wheel assemblies are ready for mounting in crane end trucks. Also available with bronze bushings or any type of ball or roller bearings for any style of mounting.

Send for Bulletin No. 3200 with complete specifications

DOWNS CRANE & HOIST CO.

540 WEST VERNON AVE., LOS ANGELES, CALIF.

▲ Mention Item NED-4171 when writing ▲

...avenging "Torpedo 8"

"Wright engines powering Avenger torpedo planes have performed in brilliant style" . . . recently stated a Navy Executive, ". . . and helped to revenge the Torpedo Squadron 8, wiped out almost to a man during the battle of Midway." *The Avenger is powered with the Cyclone 14 Engine.*

SCHAUER Speed Lathe finishing parts of the *Cyclone 14 Engine* at the Wright Aeronautical Corp. plant in Ohio.

Best Performance with Precision Finishing

Magneto shafts for the *Wright Cyclone 14 Engine* are burred and finished for a precision fit with the **SCHAUER Speed Lathe** after each of four cutting operations. *These parts must be accurate — lives depend upon their performance.* For finishing, burring, polishing, lapping of small metal or plastic parts use **SCHAUER IDEAL Speed Lathes.** Many *standard* models.

SEND FOR CATALOG NO. 420

"the originators of today's Speed Lathes"

SCHAUER MACHINE CO.

2063 READING ROAD CINCINNATI 2, OHIO

WHEREVER WATER OR WATER SOLUTIONS ARE USED IN YOUR PRODUCTION PROCESSES CHANCES ARE YOU CAN SPEED UP PRODUCTION, SAVE MATERIALS, INSURE BETTER UNIFORMITY AND CUT WASTE BY Beckman—CONTROLLING THE pH OF YOUR PROCESS SOLUTIONS!

Let Our Engineers Help You! They have had wide experience in adapting pH control to modern industrial operations . from electro-plating to boiler feed water control, chemical processes to waste-disposal. They will gladly make recommendations to fit YOUR problem.

There is a size and type of Beckman pH instrument for every size plant—for every application. Write for literature!

NATIONAL TECHNICAL LABORATORIES • SOUTH PASADENA, CALIFORNIA

Beckman HAS PIONEERED EVERY MAJOR DEVELOPMENT IN MODERN pH CONTROL AND EQUIPMENT

▲ Mention Item NED-4173 when writing ▲

TRAFFIC LINE PAINTER

Replacing inefficient manual methods of marking traffic lines on factory aisles and floors, this traffic marking machine is compact, light in weight and self-contained. Clearly marked lines are applied to all types of floors on a production basis. Machine may be operated by any maintenance man and controls for both painting and steering are conveniently located on handle-bar. Pressure for paint spray unit is developed by means of two-cylinder air compressor driven by 1½ horsepower gasoline engine. Paint is applied by external atomizing spray gun which has adjustment so that lines can be made in any widths ranging from 2 to 6 inches.

In addition to striping factory aisles, machine may also be used for painting stripes on safety zones, in storage areas, parking stations, garages, warehouses and similar locations. Machine can be converted into portable paint spray unit for spray painting machinery, shelving, walls and like applications. Made by **Meili-Blumberg Corp.**, Box ND 5, New Holstein, Wis.

▲ Mention Item NED-4176 when writing ▲

REMOTE CONTROL? YES, AND THERE'S A DOZEN OTHER REASONS WHY YOU'LL PREFER HOBART *Simplified* ARC WELDERS.

Correct values with MULTI-RANGE DUAL CONTROL. Special, oversize, 4-pole, inbuilt type SEPARATE EXCITER. Quick straight or reverse polarity with a simple, convenient, long-life POLARITY SWITCH. Higher efficiency through cool operation with TWO-WAY VENTILATION. 100% welded steel construction, compact and modern in design.

Let us have your priority rating and we can tell you how soon a Hobart "Simplified" Arc Welder can be ready for you. Write for catalog on the complete Hobart line.

YOUR Redesigning PROBLEMS SIMPLIFIED

This New and Exhaustive Service gives Hundreds of Tested Welded Designs.

Valuable ideas for all types of metal working where welding can be used. Loose-leaf form. Hundreds of worthwhile ideas—initial plates without cost. Ask for them.

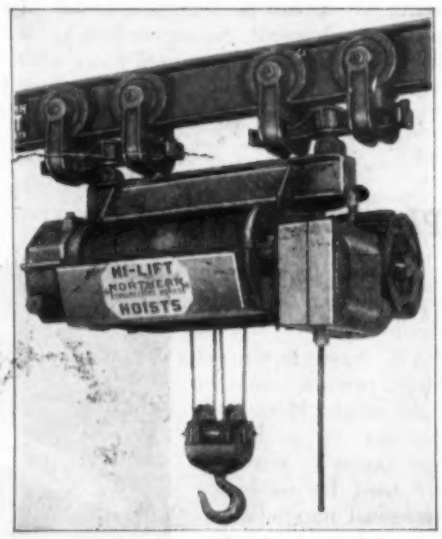
HOBART BROS., Box ND-83, Troy, O

HOBART "Simplified" ARC WELDERS

"One of the World's Largest Builders of Arc Welders"

▲ Mention Item NED-4179 when writing ▲

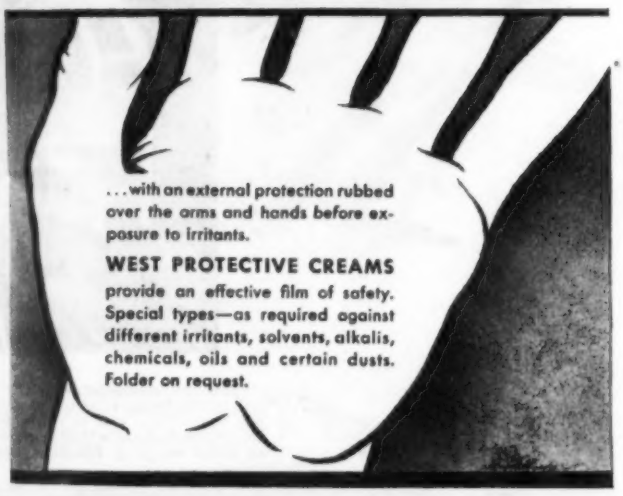
LOW HEADROOM HOIST



Available in several sizes, this line of Hi-Lift low headroom hoists is designed for operation on various types of special section monorail track systems. Trolleys are individually designed to fit track system which is used. Maximum hook lift is obtained and hoisting drum is parallel to monorail track. Both cab and floor controlled types are available and hoists may be equipped with variable speed push button control. Hoist frame is rolled steel plate and of welded construction. Gearing is machine cut and heat treated. Heavy duty roller bearings and splash lubrication are employed. Mechanical load brake is readily accessible for replacement of friction surfaces without removing gear case cover. Made by **Northern Engineering Works**, 2607 Atwater St., Detroit, Mich.

▲ Mention Item NED-4177 when writing ▲

Guard Against DERMATITIS



...with an external protection rubbed over the arms and hands before exposure to irritants.

WEST PROTECTIVE CREAMS provide an effective film of safety. Special types—as required against different irritants, solvents, alkalis, chemicals, oils and certain dusts. Folder on request.

WEST DISINFECTING Company

42-16 WEST STREET · LONG ISLAND CITY · N. Y. · DEPT. DE

▲ Mention Item NED-4174 when writing ▲

NEW...Photo-troller

A LOW COST "ELECTRIC EYE" BUILT BY WESTINGHOUSE

Here's new dependability in a low cost photoelectric control. Photo-troller is designed for application by the purchaser as the basic control unit for a wide variety of industrial, commercial and home uses. Comes complete with directions for installation. Write today for Descriptive Folder F-8557. Westinghouse Electric & Mfg. Co., Dept. 7-N, E. Pittsburgh, Pa. J-21122

Westinghouse

▲ Mention Item NED-4175 when writing ▲

IT PASSED ITS "PHYSICAL"

To keep our mechanized services on the go requires a huge supporting army of many kinds of springs. Nearly all of these springs must be 100% load tested, that is, each one tested individually. This tremendous job, almost impossible heretofore, is now accomplished by Hunter engineers through the development of accurate, high-speed production testing machines. There is only one right spring for the job. Hunter will make it to your specifications or design it for you.

HUNTER PRESSED STEEL CO., LANSDALE, PENNSYLVANIA

HUNTER Science in Springs

▲ Mention Item NED-4178 when writing ▲

CAN you imagine what a beating tank crews would take if there were no protective crash pads to "upholster" that steel interior! BUR-TEX is ideal for the job — because, in addition to its many other features, BUR-TEX has exceptional cushioning qualities.

BUR-TEX felt fabrics are used extensively for vibration dampening, sound deadening, insulating and cushioning purposes in planes, ships, trucks, tanks, jeeps and other wartime applications. Outstanding features of the BUR-TEX "200" Line are high resistance to surface abrasion, moisture, and temperature changes — great tensile strength — pliability — and long life. What's more, all BUR-TEX fabrics are economical, easily applied — and are available in standard rolls or cut to desired forms.

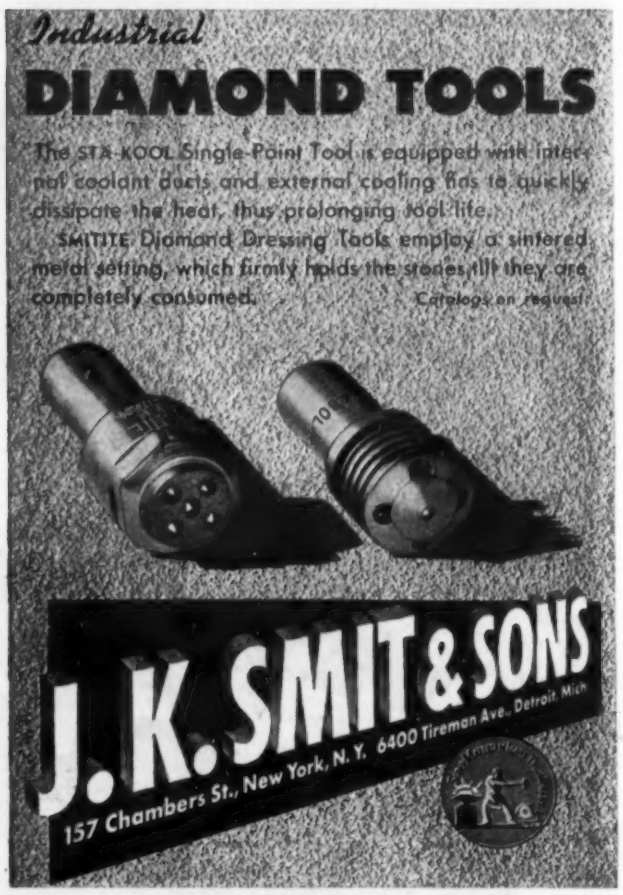
Learn how BUR-TEX can solve your wartime material problems — and fit into your planning for peacetime production in the years to come.

Write for colorful, illustrated brochure, "The Interesting Story of BUR-TEX".

BURLINGTON MILLS INCORPORATED BURLINGTON · WISCONSIN

▲ Mention Item NED-4180 when writing ▲

▲ Mention Item NED-4181 when writing ▲



▲ Mention Item NED-4182 when writing ▲

MAKE YOUR OWN PRINTS and PHOTO COPIES -and save 80%!

VICTORAY makes blueprints, black-and-white prints, photo copies—and is a photo print dryer besides. No other unit does so much, yet costs so little to own and operate! $127.50 net price inc. lamps, F.O.B. Chi.

Speed up Production

Make photo copies with only 1 second printing time, up to 24"x34". Blueprints or black-and-white prints in 3 minutes—at about 1c a sq. ft. No darkroom. Can be operated by any inexperienced person. Uses only 8 ordinary light bulbs. WRITE FOR CIRCULAR.

TRADE MARK REG. PATENTS PENDING

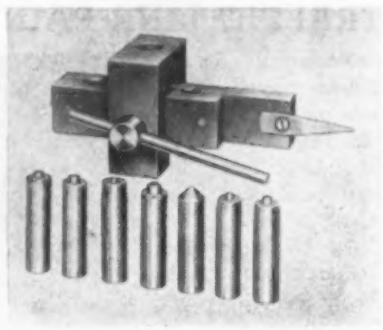
VICTORAY

VICTORAY PRODUCTS CO., 123 N. WACKER DR., CHICAGO

- PERFECT BLUEPRINTS
- BLACK-AND-WHITE PRINTS
- AUTHENTIC PHOTO COPIES
- PHOTO PRINT DRYER

▲ Mention Item NED-4183 when writing ▲

TUBING FLARING TOOL

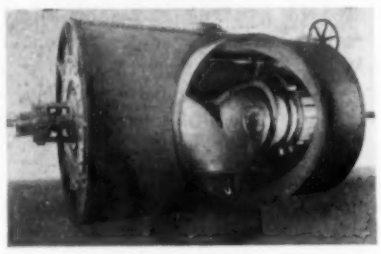


Double-lap flare used in automotive and aircraft applications can be produced readily in steel and nonferrous tubing ranging from 3/16 to ⅝-inch outside diameter with Flare-Master heavy duty portable flaring tool. Correct 45-degree flare for S.A.E. and inverted flare type connections is formed for all types of fluid-carrying lines.

Tool consists of pair of holding jaws and "U" shaped clamp with built-in vise. All wearing parts are of hardened steel. Jaws are counterbored to provide required length of tubing for correct double flare on each size of tubing. Forming punches are made in sizes for all standard tubing diameters. Made by **Everhot Products Co.**, 2057 W. Carroll Ave., Chicago 12, Ill.

▲ Mention Item NED-4184 when writing ▲

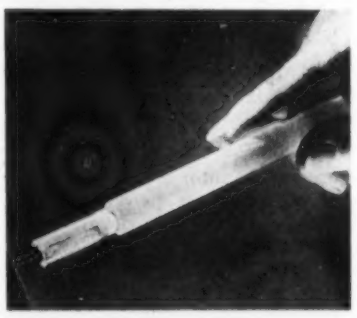
WATER POWER WHEELS



Illustrated setting shows two 25-inch Hi-Test water wheels on depressed top cast iron T-center in new boiler-iron flume. This installation was made for Massachusetts textile mill to suit specific requirements. It illustrates how design of setting and flume, as well as casing and water wheel, can be important factors in efficiency of water power development. Savings as high as 30 or 40 per cent have been made by modernization of water wheel installations which were 10 to 15 years old. Made by **Rodney Hunt Machine Co.**, 73 Maple St., Orange, Mass.

▲ Mention Item NED-4185 when writing ▲

PLASTIC WRENCH



Designed for assembly operations on radio equipment used by the U. S. Navy Bureau of Ships, wrench made of light weight Plexiglas is resistant to weathering and aging. Wrenches are used for tightening hexagonal nuts in aligning intermediate frequency coils in Naval radio sets. Plastic wrenches have high dielectric strength, ready machinability and toughness necessary for this job. Plexiglas is products of Rohm & Haas Co. Wrenches are made by **Klise Mfg. Co.**, Dept. NE, 60 Cottage Grove, Grand Rapids, Mich.

▲ Mention Item NED-4186 when writing ▲

WHAT ARE YOUR JOINT SEALING PROBLEMS

KEY Graphite Paste

The Ideal Sealer for Thread and Gasket Connections

OIL—HEAT and PRESSURE-PROOF

Naturally you think of Key Graphite Paste for high-pressure steam service and for making-up lines to carry gasoline, oil and other petroleum products.

But Key Paste is equally as good for diesel engine connections and gaskets—for sealing joints in gear housings . . . to make-up oil line connections for quenching on turret lathes, milling machines, etc. . . . for impregnating pump-rod packings and oil-proofing engine gaskets, etc. Learn about Key Paste, Now!

☆ **Send for Free Sample.** You can test Key Graphite Paste in actual service at no cost. Write for a liberal free sample, today.

KEY COMPANY

2661 McCasland Ave. • East St. Louis, Ill.

▲ Mention Item NED-4187 when writing ▲

WELDOBRIGHT

Bright

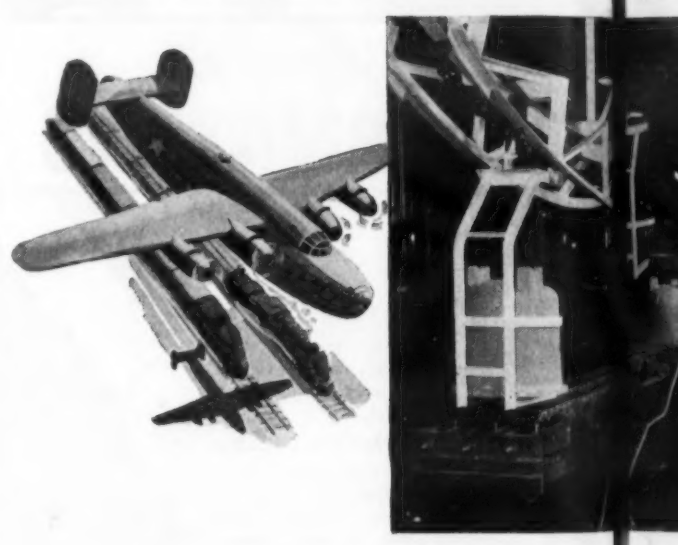
—FOR "All-In-One" FINISH DE
The Soft Rubber Binder USHI

- Bridges the gap between a grind and
- Does not load, gum or fill.
- Works metals with minimum dimen loss.
- Requires no special preparation.
- Gives a precision finish that frequently as a final polish.
- Made in wheels, blocks, sticks, rol manual and machine operations.

BRIGHTBOY INDUSTRIAL DIVISION—WELDOBER

▲ Mention Item when

Common Carrier



If you are manufacturing war material, or anything vital to the success the war effort, you can get Mathews Conveyers to handle that material as usual on your Mathews Engi

MATHEWS CONVEYOR

▲ Mention Item 9 when

HEXACON ELECTRIC SOLDERING IRONS

Dependable!

☆ Whatever the need—heavy industrial work or extremely light, delicate work—there's a HEXACON electric soldering iron to meet the particular requirements. Included are units for fast production or for service or maintenance use. Screw tip irons, plug tip irons and irons with replaceable and hermetically-sealed elements are available in this complete and diversified line. The performance of HEXACON irons is attested to, by their wide adaptation in Army, Navy and Air Corps applications. Each HEXACON unit is subjected to an insulation breakdown test of twice the intensity required by the Underwriters' Laboratories.

HEXACON ELECTRIC CO.
145 W. Clay Ave. Roselle Pk, N.J.

WRITE FOR LITERATURE
Descriptive bulletins, describing the complete line of HEXACON electric soldering irons, will be sent on request.

HEXACON

▲ Mention Item NED-4190 when writing ▲

ROBERTS

Brightboy

REG. U.S. PAT. OFF.

DEBURRING, POLISHING

BUSHINGS The Abrasive

Write us if your dealer cannot furnish you with Methods and Applications Data, samples and prices. Our field representatives are at your service.

ROBERTS RUBBER COMPANY, Newark, N. J.

Mention Item NED-4192 when writing

COMPOSITE TOOL STEEL

Use of composite tool steel effects savings of high speed and other alloy steels ranging from 50 to 80 per cent per tool, it is claimed. This composite steel consists of section of alloy steel continuously and permanently bonded to backing of mild steel. Proportions of alloy section are controllable.

Illustrated is composite steel in bar form which has been machined along entire length to specifications for forming tool. It is then cut into desired lengths for individual tools. Thus machining is all done on one piece at same time, eliminating separate machining of each tool. Made by **Jessop Steel Co.**, 555 Green St., Washington, Pa.

Mention Item NED-4192 when writing

DIE TRAINING COURSE

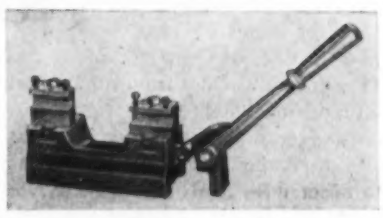
Offered to users of carbide dies, a special training course is designed for training new employees as well as "refresher" for experienced die service men. Changes and improvements in carbide die servicing methods and equipment made available during past year are covered.

Course embodies actual shop training in subjects selected. Curriculum is so arranged that each man may select only those subjects of specific interest in connection with his duties. Training is available to individuals selected by any user of cemented carbide dies, regardless of make. Individuals selected should preferably be men who will function in key positions to enable them to train other men on their return to their mills. Men taking course must be citizens of the United States.

All courses are under direction of A. E. Glen, die engineer and they are free of charge. Among courses offered are round hole carbide drawing dies, carbide shape dies, cartridge case dies, tube drawing mandrels, and die room layout and control. Full details available from **Carboloy Co.**, 11163 E. Eight Mile Rd., Detroit 32, Mich.

Mention Item NED-4193 when writing

CROSS SLIDE ATTACHMENT

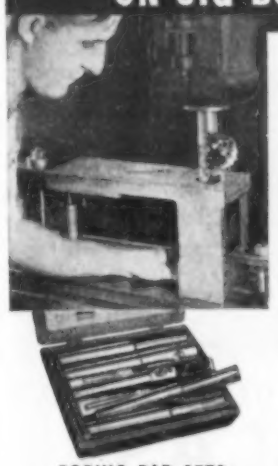


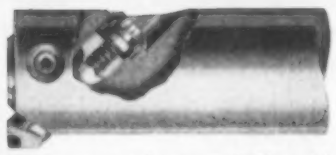
Both forming and cut-off work are handled by this lever operated cross slide attachment which is designed for easy adaptation to Atlas, Logan, 9-inch South Bend, Craftsman and similar lathes. This double tool post device operates without disturbing tool or carriage positions.

Conversion of engine lathe to production machine and vice versa can be accomplished quickly because cross slide fits dovetail on lathe carriage. As much as 75 per cent of operator's time is claimed to be saved over normal method of using handwheel. Made by **Kessler Aero Tool Products Co.**, 211 W. Palm Ave., Burbank, Calif.

Mention Item NED-4194 when writing

HOW TO HELP YOUR OPERATOR ON JIG BORING WORK





Cut-away section showing method for quick tool adjustment — positive wedge-locking.

PROVIDE HANDY PRECISION BORING TOOL KITS

These new Gorton-Wetmore Boring Bar Sets are ideal for jig boring and accurate production work. The tool is adjusted in and out rapidly by a screw graduated in thousandths . . . positive wedge-locking of cutting tool . . . wide range of adjustment . . . low cost cutting tools, easily replaced. All bars furnished with H. S. S. cutting tools, and have No. 9 or No. 10 B & S taper shanks.

A complete set will prove a time-saving accessory to your jig boring machine.

FREE . . . . For additional information write for Bulletin #1317-D.

BORING BAR SETS

Set 789-1 contains 4 boring bars for holes up to 2" dia., and one boring head with No. 9 B & S taper shank. Boxed **$139.90**

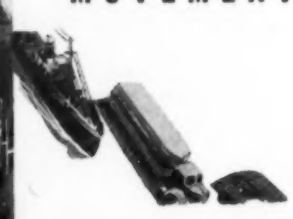
Set 790-1, as above, but with No. 10 B & S taper shanks **$145.70**

Note: Morse Tapers furnished at slight extra charge.

GEORGE GORTON MACHINE CO.
1103 13TH STREET, RACINE, WISCONSIN, U. S. A.

Mention Item NED-4196 when writing

VITAL TO WAR SUPPLY MOVEMENT



SPEEDY, ON-TIME TRANSPORTATION of materials, supplies and parts within a plant ranks in importance to the war effort with America's railways, trucks, ships and cargo planes.

A well-engineered Conveyer System, geared to the speed of workers and machines, is a practical method of improving production from the receiving of raw materials right through to the shipping area.

MATHEWS CONVEYERS FOR MECHANIZED PRODUCTION

MATHEWS CONVEYER COMPANY ELLWOOD CITY PENNSYLVANIA

Mention Item NED-4199 when writing

PALMGREN ANGLE VISES

HEAVY-DUTY Model

For Quick — Accurate Set-ups

PALMGREN Heavy Duty Angle Vises are built sturdy and rugged for tough, heavy jobs. They are accurately graduated in degrees, can be quickly adjusted to any angle, stay locked under severe service and save valuable hours otherwise wasted in tedious make-ready, wedging or making temporary jigs and fixtures.

Jaws are hardened and ground. Special outstanding features are the size and opening of jaws—4" Jaws open full 4"; the 6" Jaws open full 6" etc., with corresponding depth of Jaws. Vise can be used as ordinary vise when lowered to horizontal position. Swivel bases furnished if desired. Sizes 4", 6" and 8" Jaws and openings. Prompt deliveries.

Write for Bulletin H-8 "101 Angle Operations" and complete line of PALMGREN Vises

CHICAGO TOOL & ENGINEERING CO.
Mfrs. of PALMGREN PRODUCTS for over 25 years
8378 SOUTH CHICAGO AVENUE • • • CHICAGO

PRECISION WORK AT ANY ANGLE

Mention Item NED-4197 when writing

SPARTAN

TANNAGE MAKES LEATHER PACKINGS DO MORE

Longer life . . . surer sealing . . . low friction . . . flexibility at low temperatures . . . adaptability to many mediums — are a few of the reasons why leather is an ideal packings material.

Add Graton & Knight's exclusive "combination" tannage — Spartan — and you get these advantages: chrome leather's resistance to oil and heat (around 200° F.) . . . mellowness and flexibility not found in the usual chrome-tanned leather.

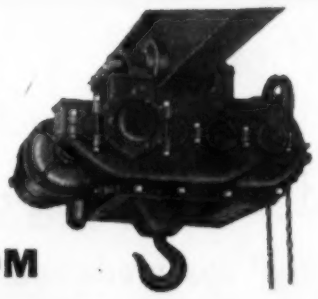
Specify Spartan — acknowledged the top-quality packings leather.

Write for Spartan Packing Catalog

GRATON & KNIGHT COMPANY
WORCESTER GRATON AND KNIGHT MASSACHUSETTS

Mention Item NED-4191 when writing

Northern Hi-Lift



LOW HEADROOM ELECTRIC HOISTS

Low headroom, high hook lift, roller bearing hoists, from ¼ to 16 tons capacity—Monorail types with hand or motor travel. Push button, pendent cord or cab control. Hoists for rigid mounting or for hauling service. New modern electric hoists designed for hard service. Steel suspension, hardened steel gears, oil bath lubrication. Standard motors and control. Cranes of all types up to 100 tons capacity.

Offices in All Principal Cities

NORTHERN ENGINEERING WORKS
2603 WATWATER STREET, DETROIT, MICH.

Mention Item NED-4195 when writing

You get accurate, dependable results and SAVE A LOT OF MONEY—with the Delta Carbide Tool Grinder...

This low-cost grinder runs absolutely true, free from vibration — for delicate grinding of carbide tipped tools.

Manufactured by modern precision methods in a modern plant. So well-built, so accurately machined that you can depend on results — so low in cost that it can be used profitably in *any* shop. Many outstanding features to assure accuracy and long life.

Widely used in war plants, this good-looking, modern machine has made a record for itself. Get credit for discovering the low-cost Delta way in *your* plant. Send for the new Delta catalog giving full details.

M-2F

DELTA MILWAUKEE Machine Tools

ARMY E NAVY

THE ARMY NAVY "E" —awarded for excellence in the production of machine tools vitally needed in the war effort.

TEAR OUT AND MAIL THIS COUPON TODAY

THE DELTA MANUFACTURING CO.
616H E. Vienna Ave., Milwaukee 1, Wis.

Please send me your new catalog giving full details on the Delta Carbide Tool Grinder and your full line of low-cost machine tools.

Name_____ Position_____

Company_____

Address_____

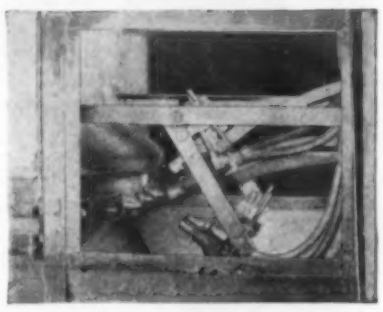
City_____ (____) Zone State_____

Mention Item NED-4198 when writing

AMMUNITION SHELLS

CLEANED

INSIDE AND OUTSIDE
AUTOMATICALLY
and at a high rate of speed with
LEIMAN BROS.



ROTATING-FIXTURE, MULTIPLE-NOZZLE

SAND BLAST

Complete outfits are furnished for shells of all calibres and for all other classes of work—Metals, plastics, glass, composition, bakelite, etc.

RAPID DELIVERY TO SPEED WAR SUCCESS

LEIMAN BROS. Inc.
167-2 Christie St. Newark, N. J.

▲ Mention Item NED-4201 when writing ▲

IN PRODUCTION

COLD DRAWN STAINLESS TUBES MADE FROM STRIP
UP TO 5/8" OD—WALL FROM .012" TO .083"

SUPERIOR TUBE CO. NORRISTOWN, PENNA
WELDRAWN (WELDED DRAWN) STAINLESS TUBING

Write for samples and detailed test data

WELDRAWN STAINLESS TUBING

Seamless Tubing Features at Lower Cost!

WELDRAWN was developed by *Superior Tube Company* to meet the increasing demand for low cost tubing in 18-8 and other Stainless analyses. One of the outstanding features of this new product is the fact that no metal is added during the welding, assuring a completely homogeneous tube which will not show inferior corrosion resistance. After cold drawing by Superior, the weld cannot be detected except by the use of a metallurgical microscope

SUPERIOR TUBE CO. NORRISTOWN PENNSYLVANIA

"For fine small tubing" in Seamless and other Types and various Metals

▲ Mention Item NED-4202 when writing ▲

Put it on Your Planning Board

the HANSEN ONE-HAND TACKER

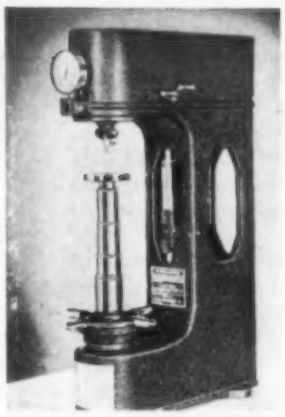
ENGINEERS, plant and production managers, are adopting the HANSEN one-hand TACKER as the fastest and most economical method of doing various tacking, fastening and assembly jobs. Tacking plywood in airplane, speedboat and radio construction, and other war-time production, are among its many uses. Operates with one hand. Models for driving either Tackpoints or T-head Tacks up to 1/2" length,—into hard wood, thru thin metal or tin.

WRITE FOR DETAILS AND FOLDER, specifying your tacking problem. Send samples you wish tacked or fastened together.

SEND FOR FOLDER

HANSEN TACKERS STAPLES **A. L. HANSEN MFG. CO.**
5164 RAVENSWOOD AVE. CHICAGO, ILL.

HARDNESS TESTER



Of improved design, this hardness tester for Rockwell testing is available in three models. Accuracy of measurement and speed of operation are features. Three anvils are standard equipment. Large flat bearing surface work is handled on 3½-inch anvil. Spot anvil is provided for most standard size pieces and for use with test blocks. V-shaped anvil is for testing round and cylindrical parts. Two small V-shaped anvils form part of adjustable steady rest.

Frictionless spindle provides correct minor load at all times. Zero drag trip eliminates friction or drag on loading beam. Dial indicator adjustment affords simple means of maintaining accuracy of readings. Adjustment is provided for minor load. Fully enclosed elevating screw has self-lubricating reservoir and adjustable steady rest. Equipment includes diamond cone penetrator and steel ball penetrators for Rockwell testing on "C", "B" and most other standard scales. Made by **Clark Instrument, Inc.**, 10300 Ford Road, Dearborn, Mich.

▲ Mention Item NED-4204 when writing ▲

ALTITUDE TEST CHAMBER

Consisting of vaporproof automatic mechanical refrigeration cabinet and enclosed vacuum chamber completely surrounded by air space, this Amcoil test chamber is designed to simulate conditions encountered at high altitudes for checking aircraft parts and instruments. Illustrated model No. RAC-11 has interior usable space of 30 x 24 x 18 inches or cubical content of 8 cubic feet. Temperature range is ambient to minus 70 degrees Cent. or minus 55 to plus 70 degrees Cent. Pressure may range from atmospheric to that encountered at altitudes of 60,000 feet.

Refrigerating coil above vacuum chamber is of ample size to maintain ambient temperature as low as necessary to offset mass load, heat leakage and similar conditions. Interior of altitude chamber has coil and forced air unit for carrying away any heat from motors or other equipment under test.

Floating glass seal assures perfect alignment when closing main refrigerating cabinet door. Seal to vacuum chamber is made at same time when refrigerator door is latched. Low relative humidity can be obtained by cooling and then sealing chamber prior to reheating. Changes in construction of vacuum chamber as required by testing procedure can be made without affecting cabinet design. Made by **American Coils Co.**, 27 Lexington St., Newark, N. J.

▲ Mention Item NED-4205 when writing ▲

This "BIG STICK Policy" ups production 140%

Teddy Roosevelt had a good idea in 1901 when he advised, "carry a big stick, and you'll go far."

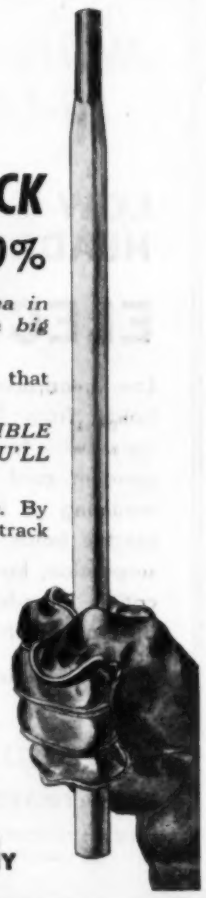
Yes, by today's arc welding standards that "Big Stick Policy" is still good.

Right! USE THE BIGGEST POSSIBLE STICK OF ELECTRODE, AND YOU'LL GO FAR.

Look what they're doing in this shop. By boosting electrode size, output of tank track sections was increased like this:

Size "Fleetweld" Electrode	Parts Welded Per Hr.
1/8"	10
5/32"	17
3/16"	24

Swell! 3/16" electrode may not be a giant but it got "big stick" results here . . . an output increase of 140%. Some shops are boosting electrode size up to 3/8". It all depends on the nature of your work. You can get "big stick" advice from Lincoln.



THE LINCOLN ELECTRIC COMPANY
CLEVELAND, OHIO

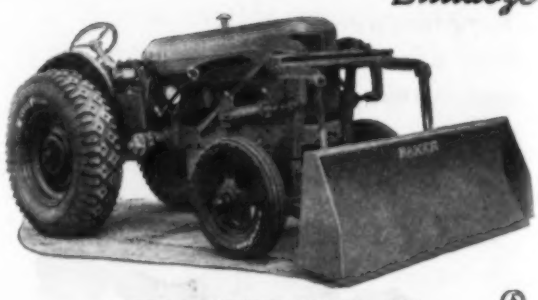
Handle

Borings and turnings
Briquettes
Sawdust
Septic tank residues
Tire carcasses
Dry chemicals

to

scrap pile
cupola skip hoist
bagging room
drying beds
masticators
process

with a Baker "Baby" Bulldozer!



THE BAKER MFG. CO.
519 Stanford Ave. Springfield, Ill.

BAKER *The Modern Tractor Equipment Line for* EARTH MOVING, LEVELING AND GRADE BUILDING, SNOW REMOVAL, ROAD MAINTENANCE

▲ Mention Item NED-4207 when writing ▲

If you need prompt, dependable, metal finishing information, call on Udylite. No organization in the country is better qualified to give you advice in plating, polishing or anodizing, gained through years of practical application, in all sorts of installations under every type of conditions.

Udylite maintains a large staff of experienced Metal Finishing Engineers and Electrochemists, whose consultation and advice is available to Udylite customers. These men know their business thoroughly and they can help you plan a new installation or revise your present one for greater efficiency.

Udylite has a complete line of metal finishing equipment, second to none in quality and performance. Special equipment will be designed and built to your requirements.

Udylite offers a complete line of best quality supplies, from **A**cids to **Z**inc anodes.

Call on Udylite for your Metal Finishing needs. You pay nothing extra for Udylite's "Know How."

THE UDYLITE CORPORATION
1651 E. Grand Blvd., Detroit, Mich.
Chicago 1943 Walnut Street · Long Island City, N. Y. 11-18, 44th Drive · Cleveland 4408 Carnegie Ave.

In War, as in Peace . . .

CERRO ALLOYS

SAVE TIME and CUT COSTS!

CERROMATRIX (Melting Temp. 250° F.) For securing punch and die parts, anchoring machine parts without expensive drive fits, short run forming dies and other metal-working applications.

CERROBEND (Melting Temp. 158° F.) Used as a filler in bending thin-walled tubing to small radii. Easily removed in boiling water. Also used for aircraft assembly jigs, templates for forming dies and other purposes.

CERROSAFE (Melting Temp. 190° F.) Used to accurately proof-cast cavities such as molds, gun chambers, forging dies, etc. and for many similar applications.

REPRESENTATIVES AND DISTRIBUTORS

BROOKLYN, N. Y., Belmont Smelting & Refining Works.
ANSONIA, CONN., Jackson Associates.
BOSTON, MASS., Jackson Associates.
PHILADELPHIA, PA., Castaloy Metal Sales Company
CHICAGO, ILL., Sterling Products Co., Inc.
CLEVELAND, O., Die Supply Co.
DALLAS, TEX., Metal Goods Corporation.
DETROIT, MICH., Castaloy Metal Sales Company
HOUSTON, TEX., Metal Goods Corporation.
KANSAS CITY, MO., Metal Goods Corporation.
LONDON, ENG., Mining & Chemical Products, Ltd.
LOS ANGELES, CAL., Castaloy Metal Sales Company
MILWAUKEE, WISC., Harry C. Ketteleon, Inc.
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MOLINE, ILL., Sterling Products Co., Inc.
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NEW ORLEANS, LA., Metal Goods Corporation.
ST. LOUIS, MO., Metal Goods Corporation.

CERRO DE PASCO COPPER CORPORATION
40 WALL STREET - - - NEW YORK, N. Y.

▲ Mention Item NED-4209 when writing ▲

"TIME SAVER"

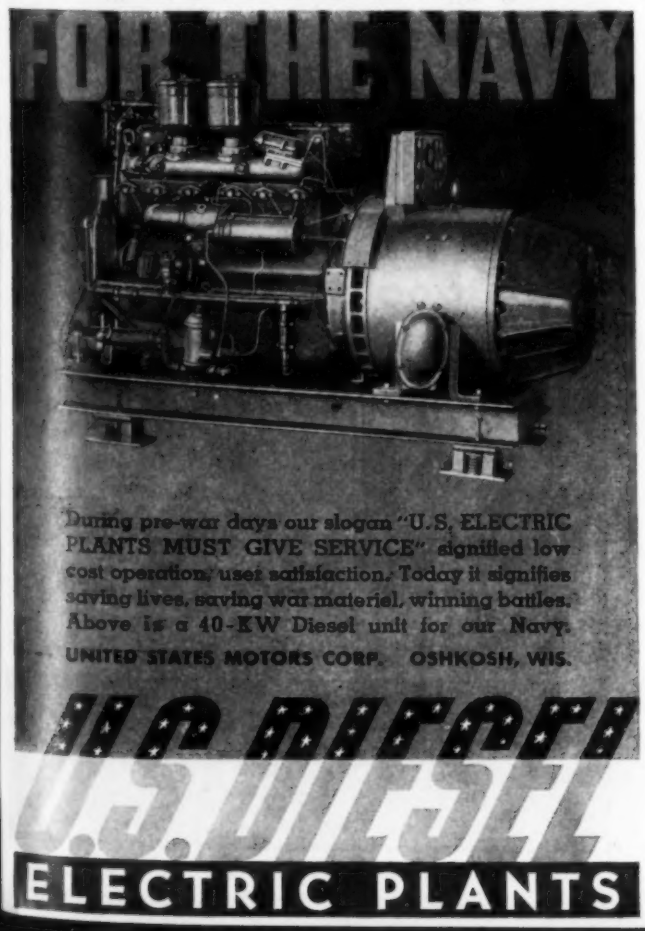
Improved holder with interchangeable steel type makes part number changes a simple operation. Turn a screw to make the change. . .Guaranteed for years of service. Used by hand or press, it's a time and money saver.

PROMPT DELIVERIES

STOCK SIZES:
TYPE #1
TYPE #2
TYPE #3

SOSSNER 161 GRAND STREET NEW YORK CITY

▲ Mention Item NED-4210 when writing ▲



METAL PARTS WASHER

High speed washing of flat, fragile work or circular parts having intricate pockets and crevices is possible with this Tabl-Spray metal washing machine. All surfaces of parts are exposed to power sprays during rotation in unit. This assures uniform coverage and fast cleaning.

Parts to be cleaned are placed on mesh table and they are then rotated through spray solution which is discharged from non-clogging nozzles. After required washing time, solution valve is closed and parts continue to rotate until fully drained. If rinsing with fresh water is desired, this operation can be handled without transferring parts and water is diverted from solvent tank by means of special drainplates. Compressed air blowoff may be used after cleaning to remove excess liquid from parts.

Recirculated cleaning solution is automatically strained to remove all chips and foreign matter. Spray system may be removed easily for cleaning and is readily accessible for adjustment. Equipment may be used either with alkali washing solution or with solvent emulsion. Capacity of machine is parts measuring up to 25 inches in diameter and 12 inches in height. Larger machines are also available. Made by **American Foundry Equipment Co.**, 508 S. Byrkit St., Mishawaka, Ind.

▲ Mention Item NED-4212 when writing ▲

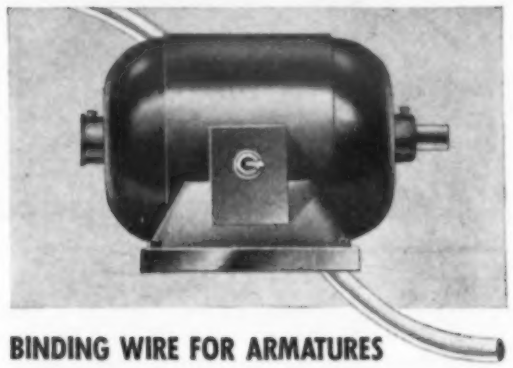
ROTATING MACHINE TABLE

Applicable for multiple machining operations on certain types of machine tools, this Turn Table permits mounting of two or more work pieces at one time for continuous production. For example, a radial drill can be performing drilling and tapping operations on one piece while another is being mounted in place. It is also useful for operations where turning of work table is desirable.

Standard sizes measure 30 x 30 inches and 42 x 42 inches square. First has 3-inch thick surface plate and second has 4-inch surface plate, both being fitted with T-slots machined from solid metal. Models available include 34-inch stand model, illustrated, and 9-inch high low base type for use on machine tables. Single motion locking mechanism securely locks table to stand in desired position. Made by **The Challenge Machinery Co.**, 201 Beech Tree Rd., Grand Haven, Mich.

▲ Mention Item NED-4213 when writing ▲

PAGE *Stainless Steel* WIRE



BINDING WIRE FOR ARMATURES

High tensile strength and non-magnetic qualities of PAGE STAINLESS STEEL WIRE add to performance of wartime AC motors. Tensile strength, corrosion resistance and non-magnetic qualities also call for its use in Aircraft Control Cables. . . . And PAGE Stainless Steel Spring Wire is vital to the most modern rifles.

Yes, the PAGE mill has produced a large volume of Stainless Steel Wire and has acquired priceless data on its working qualities. Glad to cooperate at any time, even if capacity currently is available only for war production.

PAGE STEEL AND WIRE DIVISION
Monessen, Pa., Atlanta, Chicago, Denver, Los Angeles, New York, Pittsburgh, San Francisco, Portland

In Business for Your Safety

ACCO **AMERICAN CHAIN & CABLE COMPANY, Inc.**
BRIDGEPORT • CONNECTICUT

▲ Mention Item NED-4215 when writing ▲

MORE PRODUCTION AT *LESS* EXPENSE FROM YOUR AIR TOOLS

• CLECO pneumatic tools are built to stand the service on *any* job. However, increased production depends upon a few simple precautions such as these:

(1) Use adequate hose and pipe lines, with traps for water and trash. (2) Oil the tool about once an hour when the service is continuous. (3) Be sure to use the right grade of oil. In general, a light oil of high quality is what you need. (4) Avoid abusing the tool by rough handling, using unsuitable wrenches, or clamping the body of the tool in a vise. (5) Don't remove screens in connection bushings. (6) Use air of the correct pressure, generally 80 to 100 pounds at the tool.

★

The popular Cleco Cartoon Booklet, full of easy-to-remember operating instructions. Send *now* for your free copy.

★

THE CLEVELAND PNEUMATIC TOOL CO.
3781 East 77th Street ★ CLEVELAND 5, OHIO
BRANCH OFFICES IN ALL PRINCIPAL CITIES

▲ Mention Item NED-4216 when writing ▲

HEAVY-DUTY FLOOR FOR WARTIME USE

WHEN it comes to standing up under a 24-hour-a-day pounding, you can't beat a floor of Armstrong's Industrial Asphalt Tile. And when you install this floor, you immediately . . .

CUT COSTS because this flooring is low in initial cost . . . extremely durable . . . and low in upkeep because it's nondusting, self-healing, and resistant to abrasion.

SPEED PRODUCTION because Armstrong's Industrial Asphalt Tile gives you the fast-trucking floor you need. And it's nonslip . . . provides good traction on ramps.

REDUCE ACCIDENTS because this industrial floor is nonskid—even when wet. What's more, it's nonsparking and fire-resistant.

FREE TRIAL OFFER is available upon request. For full details, as well as a fact-filled booklet on Armstrong's Industrial Asphalt Tile, write to Armstrong Cork Company, Building Materials Div., 6608 New St., Lancaster, Pa.

ARMSTRONG'S INDUSTRIAL ASPHALT TILE

Where foundry space is limited

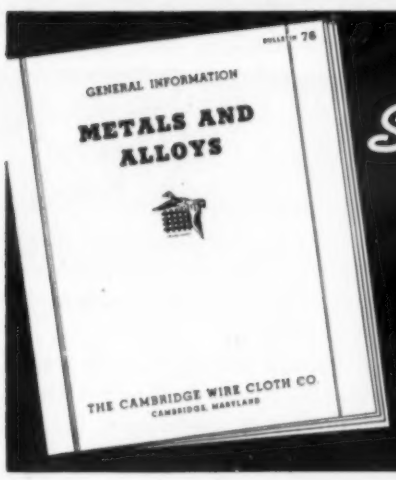
The new Robins *portable* Floatex Full-Floating Shakeout brings all the benefits of shakeout time- and labor-saving without the need for permanent installation or elaborate sand-removing mechanism. In sizes for 1-ton to 17-ton capacity. Write Dept. ND-8 for full details.

For Material Aid in Materials Handling

...It's ROBINS

ENGINEERS • MANUFACTURERS • ERECTORS
ROBINS CONVEYORS INCORPORATED
(ROBINS CONVEYING BELT CO.)
PASSAIC • NEW JERSEY
MATERIALS HANDLING MACHINERY

▲ Mention Item NED-4218 when writing ▲



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CAMBRIDGE
Fabricated Wire Products

In answer to the growing demand for information on the properties of various metals and alloys in fabricated form used in Cambridge Woven Wire Cloth, Wire Screens, Fabricated Wire Products, Metallic Filter Cloth, and Spiral Woven Wire Conveyor Belts, this special technical bulletin has been prepared. You'll find it worth having. Write for free copy.

THE CAMBRIDGE WIRE CLOTH CO.
CAMBRIDGE 13, MARYLAND

▲ Mention Item NED-4219 when writing ▲

SEND FOR THE STORY OF *Uni-Shell* MOTORS... THE LATEST DEVELOPMENT BY R & M!

Only complete line of motors in which *all types* in any one frame size are *interchangeable* and similar in appearance.

MAIL THIS COUPON

ROBBINS & MYERS, INC.
Motor Division, Springfield, Ohio

Send me the free book about Uni-Shell Integral Horsepower Motors.

Name.....*Position*.....
Firm.....
Street.....
City & State.....

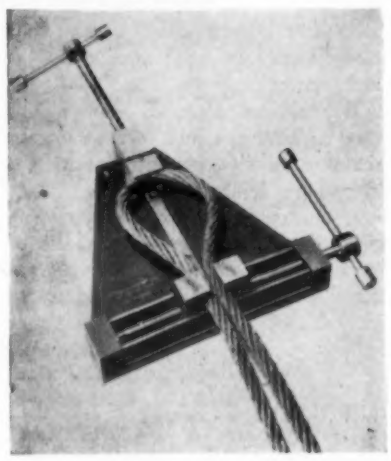
▲ Mention Item NED-4220 when writing ▲

CABLE TAPE WINDER

Easily adaptable to different size cables, this portable cable tape winder was developed to tape a comparatively long cable or plurality of cables into single unit at point where standard factory cable taping equipment cannot be used. Power for tool is provided by standard portable electric drill. Operator holds handle of drill in one hand and handle of winder in other hand, thus accurately controlling taping that is fully visible during entire operation. This labor saving tool is particularly of value in shipbuilding where many cable taping operations are performed by hand on job during construction. Made by **Leathem D. Smith Shipbuilding Co.**, Dept. A., Sturgeon Bay, Wis.

▲ Mention Item NED-4221 when writing ▲

CABLE FORMING VISE



Splicing and clamping operations, as well as forming of cable into eye or around thimble, are facilitated with this portable Rigger's forming vise. Design of screw shaft levers provides complete and easy jaw and back control. Wire rope and cable ranging in size from ⅜ to 1¼ inches in diameter can be handled without adapters. Cable is held securely and forming vise is equipped with guards to protect against cable and thread friction. Base measures 15 inches long by 14 inches wide. Made by **Patrick-McDermott & Co.**, 1645 E. Slauson, Los Angeles, Calif.

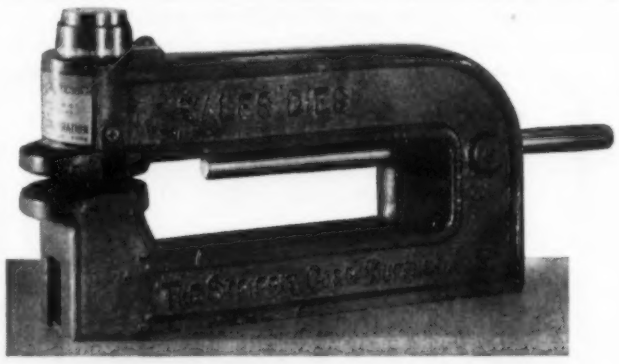
▲ Mention Item NED-4222 when writing ▲

SPARK PLUG CLEANER

Aircraft spark plug shells can be cleaned quickly and safely with Turco Type X and De-Scaler chemical compounds. All oil, grease, lead and carbon deposits are removed. Drag-out losses per gross of shells, using this method, are only about 0.06 gallons of solution or 0.03 pounds of Type X compound.

Procedure involves one hour submersion of spark plug shells in boiling 8-ounce per gallon solution of Type X, thorough water rinse, one-half hour soak in 50-50 solution of De-Scaler and water, second water rinse and neutralizing dip into Type X solution. Shells should then be dipped in oil to prevent rusting. Where re-blueing is desired, this step precedes oil dip. Compounds are made by **Turco Products Inc.**, Dept. 25, 6135 S. Central Ave., Los Angeles, Calif.

▲ Mention Item NED-4223 when writing ▲



WALES *Type "B"*
HOLE PUNCHING UNITS
for use on Press Brake Rails, and T-slotted Plates and Templates in Stamping Presses

● By unique patented design, Wales Type "B" Hole Punching Units, for punching flat sheets, can be used interchangeably on press brake rails, and T-slotted plates or templates in stamping presses.

Set-ups on T-slotted plates and templates are quickly made by simply bolting the units in exact position according to master pattern.

For press brake set-ups these units are clamped on Wales Adapters which are clamped to Wales press brake rail.

Nothing attached to press ram . . . punch and die holder is self-contained . . . punch and die always in perfect alignment . . . interchangeable punches and dies . . . die-setting time cut from hours to minutes.

Type "B" Units punch holes up to 2" in diameter in 14-gauge sheets. Write for Catalog B.

WALES-STRIPPIT CORPORATION
363 PAYNE AVENUE NORTH TONAWANDA, N. Y.
Specialists in Punching and Notching Equipment

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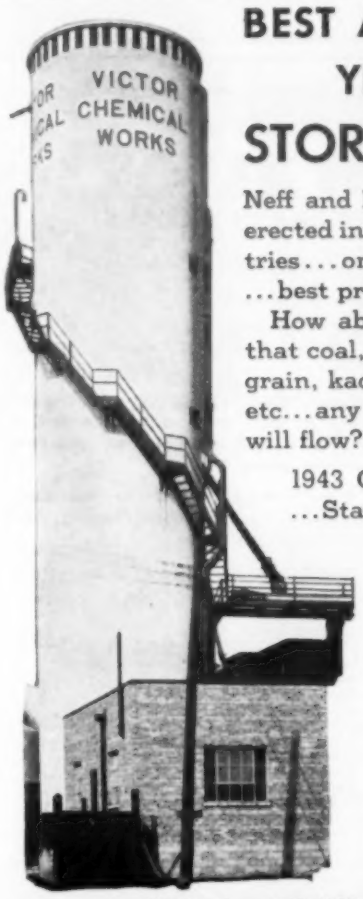


BEST ARGUMENT YET FOR STORAGE BINS

Neff and Fry Bins are being erected in all essential industries...on preferred ratings ...best proof for their worth.

How about yours to store that coal, coke, sand, gravel, grain, kaolin, founders clay, etc...any bulk material that will flow?

1943 Catalog on request ...Stave or Monolithic... Any size.

THE NEFF & FRY CO.
CAMDEN, OHIO

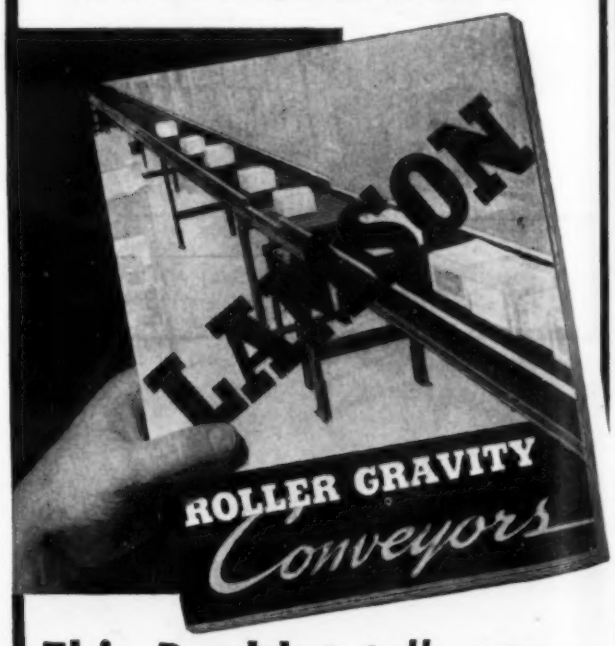
N&F BINS

▲ Mention Item NED-4225 when writing ▲

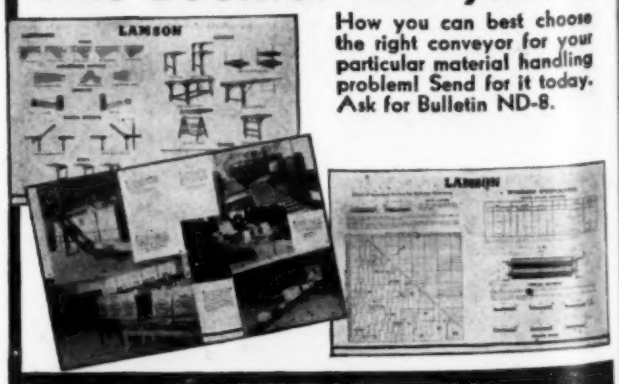
Speed Wartime Production with Fast, Efficient...

LAMSON
Roller Gravity Conveyors

No matter what your product is, a Lamson Conveyor can help you get it moving — and get it out — quicker and easier, with less waste time and less manpower. Send for your free copy of this new 16-page Booklet that will tell you all you want to know about how Roller Gravity Conveyors can take an active part in your business, and what a large part they are already playing in material-handling across the country.



This Booklet *tells you...*



How you can best choose the right conveyor for your particular material handling problem! Send for it today. Ask for Bulletin ND-8.

★ **LAMSON CORPORATION** ★
Syracuse, N. Y.
Makers of Conveyors and Pneumatic Dispatch Tubes

▲ Mention Item NED-4226 when writing ▲

A Short SWING

STOPS WASTE!

The TELLEVEL

On this inexpensive instrument, a short movement of the hanging ball results in automatic flow control, starting or stopping at any predetermined level in bins, hoppers, tanks, etc. A rising or falling level makes or breaks the electric circuit ...as your needs require. Used with bulk materials or liquids, the Tellevel is so sensitive and well-balanced that even light materials will operate it...causing a sealed mercury switch to operate elevators, conveyors, feed valves—or perform other operations.

Investigate Tellevel applications for your work. Nothing to wear out or fail. Write for descriptive Bulletin 440.

STEPHENS-ADAMSON MFG. CO.

Tellevel—Bin Level Controls · Car Loaders · Car Pullers · Winches · SealMaster Ball Bearings · ChangeMaster Variable Speed Reducers · Saco Speed Reducers

12 RIDGEWAY AVE., AURORA, ILL.

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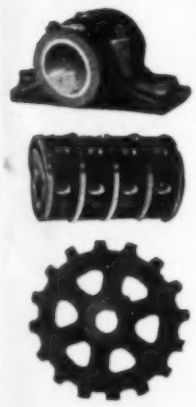
for

MAINTENANCE PARTS SERVICE

✓ CHECK WITH LINK-BELT



● The importance of every man doing his job has doubled as the United Nations constantly step up the tempo of war. And the importance of industry keeping its machinery in top production form is absolutely essential. Keep the wheels turning. Prevent over-worked machines and equipment from breaking down. Frequent and thorough inspection of your equipment will detect potential failures, and prompt attention to extra care and maintenance will avert major repairs.

Check your power transmitting equipment now and place orders for parts likely to require early replacements.

LINK-BELT COMPANY 9243-A

Chicago, Philadelphia, Indianapolis, Atlanta, Dallas, San Francisco, Toronto
Offices, warehouses and distributors in principal cities.

POWER TRANSMISSION EQUIPMENT

▲ Mention Item NED-4228 when writing ▲

Just published! Send now for this Milling Machine Catalog!

Years of service on the production line have proven Diamond Milling Machines will give you all the rigidity, accurate precision and capacity that you would expect of machines of greater size and much higher cost.

Four models available. Two for production use — two tool room. With special interchangeable accessories that speed production.

DIAMOND

DIAMOND TOOL CO.
3429 East Olympic Boulevard, Los Angeles, California

SELLING AGENT EAST OF MISSISSIPPI: H. LEACH MACHINERY CO., 387 CHARLES STREET, PROVIDENCE, R. I.

▲ Mention Item NED-4229 when writing ▲

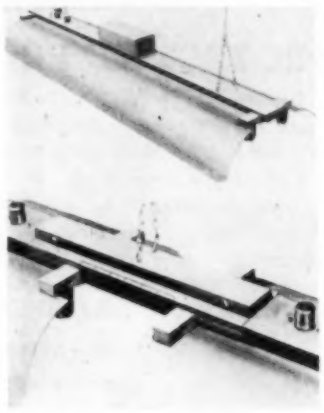
WOOD PALLETS

Designed for use with either power or hand fork trucks, pallets of wood with steel reinforcement conserve critical metal, yet they are said to be as efficient in operation as all

steel pallets formerly used. They are of hardwood construction with replaceable boards. Single face model has metal bound ends with strong metal supports. Double face model is completely steel armored. Pallets are custom built, engineered to meet user's specific demands. Made by **Palmer-Shile Co.**, 7116 W. Jefferson Ave., Detroit, Mich.

▲ Mention Item NED--4230 when writing ▲

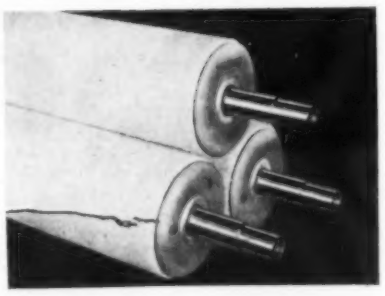
FLUORESCENT FIXTURE



Conforming to WPB's conservation order, this 5000 line of industrial fluorescent lighting fixtures features Flexi-Coupler. This device permits spacing of fixture units as much as six inches apart, yet it preserves all features of continuous run installation. It is possible, for example, to use only nine 100-watt fixtures in 50-foot run instead of normally required ten fixtures. Lightweight channels are used and non-metallic Permaline enameled reflectors attain reflection factor of 89 to 91 per cent. Units are available in two 40-watt, three 40-watt and two 100-watt sizes. Made by **Martin-Gibson Co.**, 997 Harper Ave., Detroit, Mich.

▲ Mention Item NED-4231 when writing ▲

CUSHIONED WOOD ROLLS



Cushioned surface on wood rolls for many applications is obtained through use of tubular felt jackets. Rolls are of Shaf-tite construction and thickness of felt may be varied in accordance with desired amount of cushioning effect. Felt coverings are woven in tubular form.

Rolls are available in wide range of sizes. Illustration shows 6-inch diameter roll on which jackets are about ⅛ inch thick. To insure full coverage of roll surface, jackets are made long enough to extend over ends. In many cases, metal end plates are provided as shown. Made by **Rodney Hunt Machine Co.**, 73 Maple St., Orange, Mass.

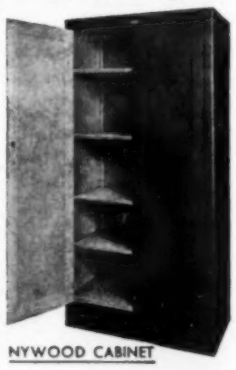
▲ Mention Item NED-4232 when writing ▲

You Can't Get Steel . . . Use

NYWOOD

the modern substitute in LOCKERS, CABINETS, Tool Stands, Shelving, etc.

NYWOOD LOCKERS



NYWOOD CABINET

Complete series of needed models in standard sizes and sectionizing. Built of sturdy plywood, made termite-proof, resistant to fire and protected against salt water, weather and odors through immersion in special solution. Tough lacquer exterior in office green. Interiors, tops and bottoms neutral tone finish resulting from processing solution. Easy assembly. Very attractive prices.

SEND FOR LITERATURE

•

NYCE METAL PRODUCTS COMPANY
4308 North Broad Street
PHILADELPHIA, PA.
Phone MIChigan 6463

▲ Mention Item NED-4233 when writing ▲

For the Girls Behind the Guns

● In the [redacted] arsenal where girls are now building guns,—Bradley Washfountains were selected because they provide clean running water to each of the 8 to 10 persons washing simultaneously,—because they provide more facilities in less space and cut piping connections by 80 per cent.

Sanitary and convenient washing facilities, as provided by Bradleys, encourage proper washing by employees—and physicians agree that this is a first essential in Dermatitis prevention. Write for copy of Picture Book of Installations.

BRADLEY WASHFOUNTAIN CO., 2253 W. Michigan Street, Milwaukee, Wisconsin.

BRADLEY washfountains

▲ Mention Item NED-4234 when writing ▲

Wheelco

PORTABLE POTENTIOMETERS

The Wheelco Portable Potentiometer, designed for checking all direct current values, will fully meet your laboratory and shop requirements.

- Instrument accuracy to .025 millivolts.
- Scale length, over 40". Scale can be continuously rotated in either direction.
- Supplied with Millivolt, Fahrenheit, or Centigrade scales.
- Millivolt scale instruments can be used with any thermocouple.
- All-purpose, built-in, run-up box and rheostat.
- Built-in thermometer, for measuring cold junction temperatures.
- Automatic or manual cold junction compensation.
- Built-in compartment for dry cells.
- Compact walnut case with removable cover.
- Ruggedly constructed, to assure long dependable service.

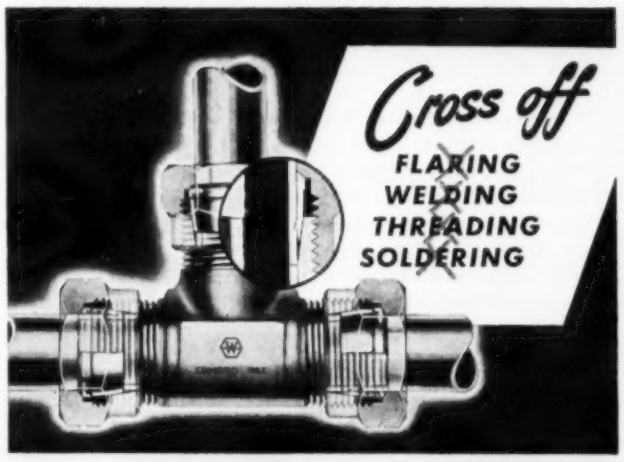
Write for free Bulletin No. A-502, today.

Wheelco Instruments Co.

829 W. HARRISON ST. CHICAGO (7), ILLINOIS

Originator of "Electronic Principle" Temperature Controls

▲ Mention Item NED-4235 when writing ▲



..WITH Ermeto SAFETY FITTINGS

Ermeto is your answer to the problem of connecting tubes of any metal without the necessity of flaring, threading, welding or soldering.

Connections made with Ermeto *will hold beyond the burst strength of the tube itself*—and the joints will withstand excessive vibration without losing their tightness.

Ermeto is the fitting you should learn all about for its wide usefulness on hydraulic, oiling, water, gas, fuel and air lines. Write for complete details.

THE WEATHERHEAD COMPANY • Cleveland, Ohio

Branches • Detroit • Los Angeles • New York • St. Louis

Weatherhead WORLD'S LARGEST PRODUCERS OF FITTINGS AND FLEXIBLE HOSE ASSEMBLIES

PLANTS IN CLEVELAND, OHIO • COLUMBIA CITY, IND. • LOS ANGELES, CALIF. • ST. THOMAS, ONTARIO, CANADA

▲ Mention Item NED-4236 when writing ▲

FREE!

New

20-Page Booklet Tells How to Obtain Better BLACK FINISHES!

CHEMICALLY CLEAN surfaces are a prime requisite in securing durable, friction-reducing black oxide coatings. That's why you will want this NEW, 20-page booklet! It describes specially designed Oakite materials and methods that speedily, THOROUGHLY remove ALL smut, grease, oil and dirt from iron, steel, zinc, brass, copper and aluminum parts...HELP YOU obtain the corrosion-resistant finishes you want. Write for your FREE copy of this informative booklet today!

OAKITE PRODUCTS, INC., 32G THAMES ST., NEW YORK, N. Y.

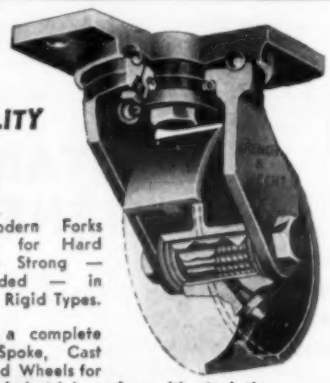
Technical Service Representatives in All Principal Cities of the United States and Canada

OAKITE MATERIALS · METHODS · SERVICE — Buy Bonds for Victory — **CLEANING** FOR EVERY CLEANING REQUIREMENT

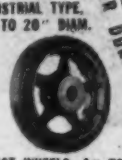
▲ Mention Item NED-4238 when writing ▲

ROLL to VICTORY

on these TOP QUALITY **WHEELS** *and* **CASTERS**



INDUSTRIAL TYPE, 12" TO 20" DIAM.



CAST WHEELS, 4" TO 20" DIAM.

These Modern Forks are Built for Hard Usage — Strong — Forge-Welded — in Swivel and Rigid Types.

We offer a complete line of Spoke, Cast and Pressed Wheels for every industrial service—with steel tires—or pneumatic, cushion or solid rubber tires for qualified war purposes.

WRITE FOR DURATION CATALOG

We Invite Your Inquiries
Please Address DEPT. D

FRENCH & HECHT, INC.
Wheel Builders Since 1888
DAVENPORT, IOWA

DUAL-DISC PRESSED WHEEL, 10" DIAM. — HEAVY DUTY, PNEUMATIC, WHEELBARROW. — CUSHION RUBBER, PUNCTURE-PROOF, WHEELBARROW.

We Can Furnish Rubber Tired Wheels for War Purposes Only

▲ Mention Item NED-4239 when writing ▲

EASIEST to Install and Remove!

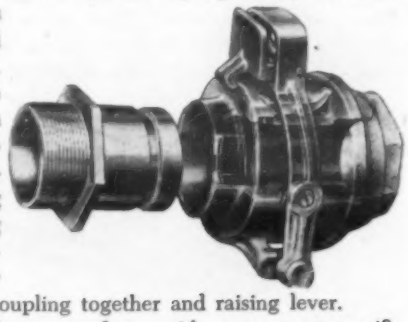
The Fafnir Wide Inner Ring Ball Bearing with Self-Locking Collar is bored to inch dimensions, for slip fit on stock shafting. It requires no locknuts, adapters, shaft shoulders, or precise machining; it locks to the shaft with just a finger-twist. Equally easy to remove.

This time-saving feature is built into every transmission unit in the complete Fafnir line. It's simple, positive, dependable . . . and exclusively Fafnir. The Fafnir Bearing Company, New Britain, Conn.

▲ Mention Item NED-4240 when writing ▲

PIPELINE COUPLING

Handling fluids as well as compressed air and vacuum, Wiggins quick disconnect couplings for pipelines provide instantaneous release as well as quick coupling. They are finding many applications in all types of liquid handling operations. Industrial and marine type couplings which are available in 2 to 10-inch sizes are disengaged by releasing latch and throwing single lever. Connection is effected by placing two ends of coupling together and raising lever.



These units are made in accordance with government specifications and larger sizes are individually tested for pressure and porosity. Sizes ranging from ¾ to 2 inches are die cast and larger sizes are machined from brass or aluminum. A special line of couplings including single and double self-sealing models as well as open type are manufactured primarily for aircraft usage but they are also adaptable for marine and industrial applications. Made by **E. B. Wiggins Oil Tool Co.**, 3424 E. Olympic Blvd., Los Angeles, Calif.

▲ Mention Item NED-4241 when writing ▲

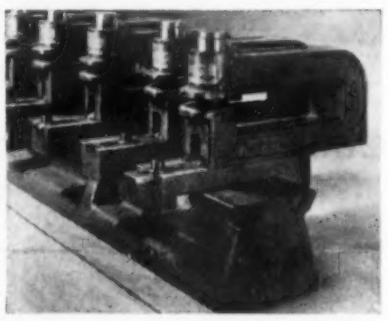
PROTECTIVE FINISH REMOVER

Removal of protective finishes, such as lacquer used to mask parts for hard chrome plating or selective hardening, is possible with Miccrostrip which contains no acids and will not affect any metal finish. It is also non-toxic. All traces of lacquer are removed by this combination of solvents. Method supersedes previously employed use of knife or wire brushes. Stripper will also remove Miccro coatings such as those used to protect plating racks. Made by **Michigan Chrome & Chemical Co.**, 6350 E. Jefferson Ave., Detroit, Mich.

▲ Mention Item NED-4242 when writing ▲

ADJUSTABLE PUNCHING UNITS

Using adjustable adapters, Type B hole punching units may be mounted directly on press brake rails and staggered as well as straight line hole punching patterns may be produced. Maximum front-to-back adjustment is 3 inches. Hole punching units are designed for interchangeable use on press brake rails with adapters, and with T-slotted plates and templates on punch presses. Set-ups are quickly made to required hole pattern.



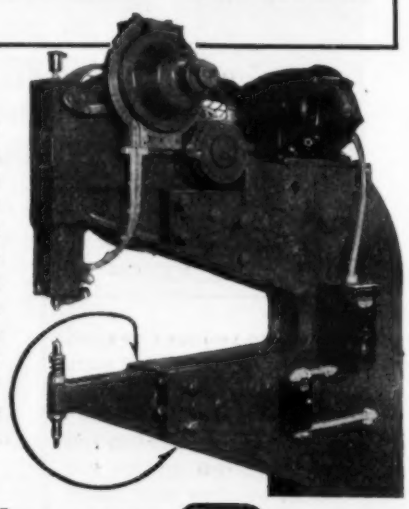
Punch, die, stripper assembly and guide are self-contained in holder to insure perfect alignment. Type B hole punching units are also available with back stop gauge rods for 1⅜-inch center-to-center hole minimum and in throat depths up to 18 inches. Illustration shows several units locked in various positions on adjustable adapters. Made by **Wales-Strippit Corp.**, North Tonawanda, N. Y.

▲ Mention Item NED-4243 when writing ▲

1600 PER HOUR!

Automatically FEEDS AND SETS ¼" DIAM.

SOLID STEEL RIVETS



● This versatile RIVITOR speeds up riveting . . . does a better job and *cuts costs.* ¼" solid rivets are handled rapidly and efficiently. Up to 36" throat depths. Capacity for a greater number of jobs... Write for bulletin today. The Tomkins-Johnson Co., Jackson, Michigan.

FOR TOUGH JOBS...SPECIFY T-J

TOMKINS-JOHNSON
RIVITORS

▲ Mention Item NED-4244 when writing ▲

Simply by Adding CAPACITORS You Can Make a Circuit Carry 10 to 40% More Load

You can add motors—also electric furnaces or other equipment—to circuits that are already overloaded if the power factor is low. How? By installing capacitors. They will neutralize the reactive (nonworking) kva and enable the entire system to carry more *working* current—as much as 40% more in some cases.

Ask your G-E representative today to estimate the possible increase in your circuit capacity, or write for Bulletin GEA-77. *General Electric, Schenectady, N. Y.*

GENERAL ELECTRIC

▲ Mention Item NED-4245 when writing ▲

Thinking about Conveyors?

consider

FLEXIBILITY

SPEEDWAYS, the lightweight multipurpose conveyor lends a new flexibility to any plant. Fully ball-bearing equipt, it is adaptable to the production line or warehouse. Adjustable stands and either 45° or 90° curves make placement easy under any factory conditions. Permanent as well as portable installations are available.

SPEEDWAYS are indispensible in speeding up package and materials handling. Write today for information and price list.

LIGHTWEIGHT **SPEEDWAYS** CONVEYOR

NIAGARA FILTER CORPORATION
3080 Main St. AMherst 7100 Buffalo, N. Y.

▲ Mention Item NED-4246 when writing ▲

A 10-LB. BOX

of Circle "C" Tool Bits

...WILL TELL YOU WHY,
in shop after shop,
CIRCLE "C" SUPER HIGH-SPEED STEEL
licks the tough jobs.

Firth-Sterling
STEEL COMPANY
McKEESPORT, PA. • BRANCHES IN PRINCIPAL CITIES

▲ Mention Item NED-4247 when writing ▲

With CHERRY RIVETS

The Cherry Blind Rivet makes it highly practical for the engineer to design up to efficiency without too many worries about how a riveted product can be fabricated. Cherry Rivets make blind riveting fast and easy. They have high shear and fatigue values so they may be used in either primary or secondary structures. The speed of factory operations makes an appreciable saving in manufacturing costs. In field repair Cherry Rivets save time, where time counts most.

The complete story on Cherry Rivets is clearly presented in the Handbook A-43. Request your copy today, Dept. A-113, Cherry Rivet Co., Los Angeles 13, Calif.

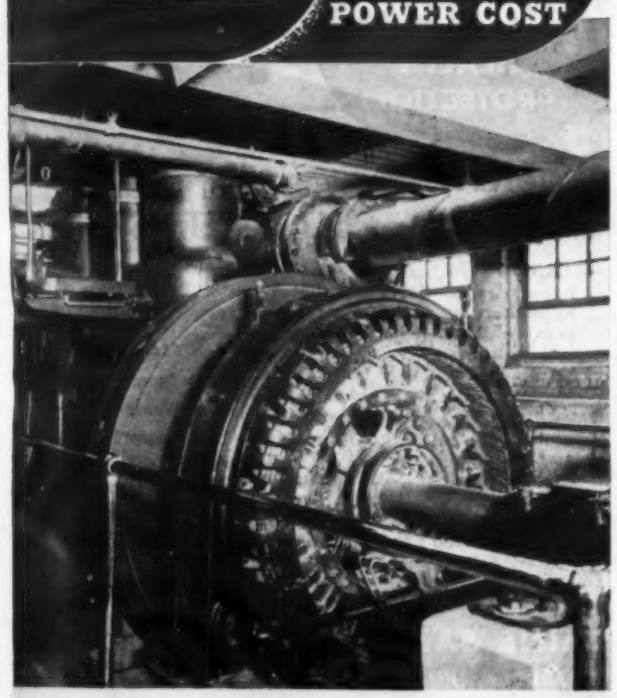
CHERRY RIVETS, THEIR MANUFACTURE AND APPLICATION ARE COVERED BY U. S. PATENTS ISSUED AND PENDING.

Cherry Rivet Company
LOS ANGELES, CALIFORNIA

▲ Mention Item NED-4248 when writing ▲

30% MORE WORK

80% LESS POWER COST



F-M Diesels provide dependable power for war production at big saving

In 20,000 hours of continuous operation . . .

- *Not a piston ring has stuck*
- *Not a breakdown has occurred*
- *No carbon has formed in the Diesels*

That's the record of two Fairbanks-Morse Diesels which now supply all of the power required by the Grand Rapids Plating Co. Furthermore, although the company is doing 30 per cent more work than when purchased power was used, power costs have been lowered 80 per cent.

Use your priority to insure against production letdown. Buy today with a view to tomorrow's profits.

FAIRBANKS, MORSE & COMPANY
600 South Michigan Avenue, Chicago
Branches with service stations throughout the United States and Canada

FAIRBANKS-MORSE
DIESEL ENGINES · PUMPS · MOTORS · GENERATORS · SCALES · WATER SYSTEMS · FARM EQUIPMENT · STOKERS · AIR CONDITIONERS · RAILROAD EQUIPMENT
Diesels

▲ Mention Item NED-4249 when writing ▲

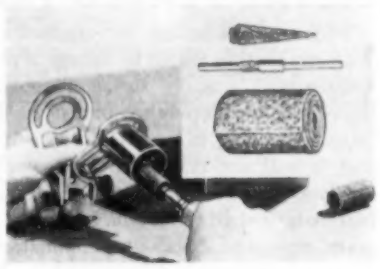
METAL SAW

Originally designed for slotting super-charger wheels, this high speed steel circular saw has many applications in kindred operations for sawing ferrous and nonferrous metals where accuracy is first requirement. Saws are made 0.062 inch on tooth edge by 0.052 inch at mandrel. Relief clearance is ground at back of each tooth to depth of gullet, which allows for sufficient clearance where tolerances as close as 0.0002 inch must be maintained.

Specifications are limited and saws are available in the following sizes only: 3, 4, 5, 6 and 8 inch diameters for most standard milling machines. Made by **E. C. Atkins & Co.**, 469 S. Illinois St., Indianapolis, Ind.

▲ Mention Item NED-4250 when writing ▲

ABRASIVE WHEELS AND POINTS



Construction of this line of abrasive wheels and points is such that fresh abrasive surface is constantly in contact with work. Spiral roll may be used down to last layers. Wheels and micro-points may be used for deburring exterior edges, finishing irregular surfaces and touching up holes, openings and corners. Types and sizes are available for hard alloy steels, wood, rubber, resin, plastics and other materials.

Mandrels are of tapered thread construction which firmly locks wheel or point on to shaft by rotary motion. Made by **Flex-Abrasive Co.**, Dept. E, 100 N. LaSalle St., Chicago, Ill.

▲ Mention Item NED-4251 when writing ▲

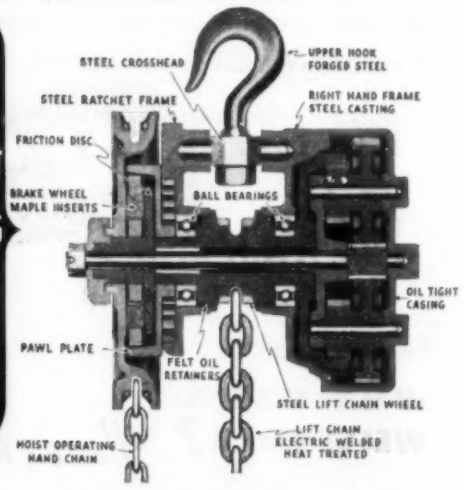
FIRE EXTINGUISHER CASE

Made of inexpensive, non-critical materials, this Tampless tamperproof fire extinguisher case houses extinguisher and yet allows instant removal for authorized use. Quick pull on sealed string permits case to be unfolded and extinguisher removed from its bracket. Case can be reused by resealing it with special insignia tape.

Information on proper fire fighting procedure is imprinted on case. Styles are available for foam, soda-acid and vaporizing liquid extinguishers in various sizes. Made by **American-LaFrance-Foamite Corp.**, 700 Erie St., Elmira, N. Y.

▲ Mention Item NED-4252 when writing ▲

The Chain Hoist with Gears *Sealed in Oil!*



Write us for Reading Catalog No. 58 which describes this and other types of Reading Chain Hoists.

Reading Chain Hoists

- Multiple Gear Hoists—½ to 20 tons
- Army-Navy Type Hoists—½ to 10 tons
- Differential Type Hoists—½ and 1 ton
- Extended Chain Wheel Hoists—½ to 5 tons
- Low-Head Hoists—2 to 12 tons
- Quick-Speed Multiple Gear Hoists—up to 1 ton
- Twin Hook Type Hoists—½ to 5 tons
- Worm Geared Hoists—½ and 1 ton

READING CHAIN & BLOCK CORPORATION
2106 ADAMS STREET READING, PA.

▲ Mention Item NED-4253 when writing ▲

NEW SAFETY CONTROL FOR A. C. ARC WELDERS

Protects operator by disconnecting welding transformer when arc is broken

★ High open circuit voltages of A. C. arc welders (transformer type) create a definite hazard to operators.

Square D's new class 8992 safety panels eliminate this hazard by automatically disconnecting the welder transformer after the arc is broken. The transformer is automatically reconnected the instant the operator touches the electrode to the work. There is no loss in operating speed or efficiency.

These new safety panels can be used with any make or model of A. C. transformer type arc welder . . . ***Write for descriptive Bulletin No. 8992.***

ELECTRICAL EQUIPMENT · KOLLSMAN AIRCRAFT INSTRUMENTS
SQUARE D COMPANY
DETROIT · MILWAUKEE · LOS ANGELES

▲ Mention Item NED-4254 when writing ▲

MORE *SELF HELPS* FOR PIPING TRAINEES

YOU'LL FIND 'EM IN *"PIPING POINTERS"*

For practical hints on wartime piping ingenuity, see "Piping Pointers" Bulletin No. 6. This Crane aid-to-Victory service can do much to help your maintenance men—veterans or trainees—prevent delays on piping jobs. Copies of Bulletin 6 and preceding issues given free on request. Ask your Crane Representative or write to Crane Co., 836 S. Michigan Ave., Chicago, Ill.

CRANE VALVES

▲ Mention Item NED-4255 when writing ▲

Actually cuts its own thread!

SHAKEPROOF *Thread-Cutting Screws* SAVE MAN HOURS!

THE SLOT DOES IT!

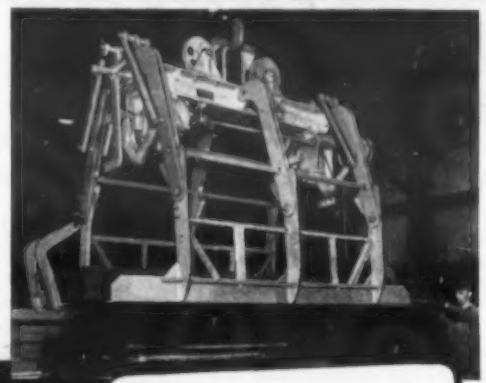
● This screw eliminates any need for separate tapping and assures a strong, tight fastening every time. The exclusive thread-cutting slot cuts a perfect mating thread in which the screw fits so snugly there is little chance for vibration to start any loosening action. Save vital assembly time with this better fastening. There are special types for both metal and plastic applications. Send for free sample test kit and complete size and price data—write today!

***FREE* TEST KIT!**

SHAKEPROOF inc.
Distributor of Shakeproof Products
Manufactured by ILLINOIS TOOL WORKS
2501 North Keeler Avenue · Chicago, Illinois
Plants at Chicago and Elgin, Illinois

▲ Mention Item NED-4256 when writing ▲

C-F SHEET LIFTER



handle the largest and thinnest sheet stock...

easily and safely

With a C-F Sheet Lifter 1 man can handle the thinnest stock or longest strips quickly and easily—can pick up loose or bundled sheets, carry them safely and stack them closer and higher without slipping or sliding, bending or kinking, without denting or rippling edges.

C-F Sheet Lifters are made in a wide range of sizes and types; for any cranes, monorail or hoist; for any headroom or working situation; in capacities from 2 to 60 tons. All have patented "elbow" arms. All are accurately balanced and counterbalanced and are easily operated by 1 man . . . with hand chain or motor control.

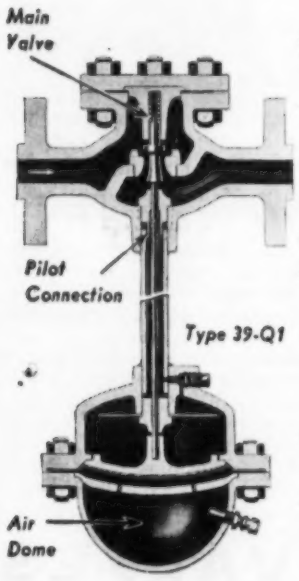
Write for Bulletin SL 21

CULLEN-FRIESTEDT CO.
1304 S. Kilbourn Ave., Chicago, Ill.

▲ Mention Item NED-4257 when writing ▲

Simple, isn't it?

The Foster 39-Q1 Pressure Reducing Regulator Gives You Accuracy . . . Easy Setting . . . Low Maintenance

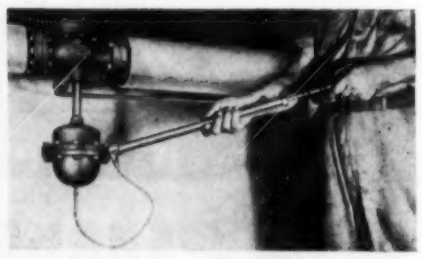


Here's why...

- Single seated for dead-end service
- Valve closes in direction of flow
- No springs . . . no weights
- No stuffing box . . . no packing
- Few moving parts
- Long stem . . . low heat transfer
- Large diaphragm area . . . sensitive regulation
- Easy to load or unload dome like an automobile tire

for

- Initial steam pressures up to 2500 pounds
- Uniform delivery pressures up to 1200 pounds
- Temperatures up to 1000° F.
- Double-seated for continuous flow—Type 39-Q2



Dome being loaded at the valve by hand pump.

If you have a pressure or temperature regulation problem that hasn't yet been solved satisfactorily, Foster engineers will study the conditions and submit a specification on a valve to fit your specific application . . . without obligation. Complete handbook on Reducing Valves, Temperature Regulators, Pump Governors and Sirens—with eight sections of useful engineering data will be sent if the request is made on company letterhead.

Foster Products

Pressure Regulators . . . Relief and Back Pressure Valves . . . Automatic Stop and Check Valves . . . Altitude Valves . . . Damper Regulators . . . Fan Engine Regulators . . . Pump Governors . . . Temperature Regulators . . . Liquid Level Controllers . . . Float and Lever Balanced Valves . . . Non-Return and Triple Duty Valves . . . Vacuum Regulators or Breakers . . . Sight Flow Boxes . . . Strainers . . . Safety Valves . . . Sirens.

FOSTER ENGINEERING *Company*
122 MONROE STREET, NEWARK, N. J.

THERE'S NOW A FOSTER VALVE FOR EVERY SERVICE

8-FE-5

▲ Mention Item NED-4258 when writing ▲

PROJECTION SCREEN

Designed originally for use by armed forces, this Day-Time projection box is available for educational and other visual training uses by industry. Shielding around glass beaded Hy-Flect screen surface permits showing of motion pictures and slides in broad daylight.

When folded, screen fits easily into compact storage case. It can be set up easily and adjusted in height for four different positions. Films or slides may be shown to audiences of up to 150 persons. Made by **Radiant Mfg. Corp.**, 1140 W. Superior St., Chicago, Ill.

▲ Mention Item NED-4259 when writing ▲

METAL PLATED PLASTIC

Plastics, glass or any non-conductor may be plated perfectly with any plating metals by means of recently developed process. Convex and concave surfaces, convolutions, corners and recesses are as thoroughly plated as flat or simple round surfaces, according to manufacturer. Metal plating is permanent and it will not crack, chip nor peel.

Claimed features of process include conservation of critical materials, weight reduction, simplified design, lower production costs, dimensional stability, elimination of oil and moisture absorption, elimination of electrolytic corrosion between dissimilar metals and increased heat resistance.

Process can be used for plating magnetic and electric shielding on radio, electronic and electrical equipment. Both rigid and pliable types of plastic tubing and fittings can be plated. Developed by **Precision Paper Tube Co.**, 2039 W. Charleston St., Chicago 47, Ill.

▲ Mention Item NED-4260 when writing ▲

MILLING CUTTERS

Rapid and accurate face, side, end, slot and straddle milling are performed by Grayson-Kennametal cutters. They are constructed with bodies of Meehanite tipped with Kennametal. Shock resistance of body combined with hardness and strength of tips produces rugged tool.

Milling cutters employing double negative rake angles are available in grade KM for milling steel, and with positive rake angles in grade K2S for rough milling of cast iron or grade K4H for milling aluminum-silicon alloys, magnesium - aluminum alloys, brass bronze and most other nonferrous metals. Made by **McKenna Metals Co.**, 171 Lloyd Ave., Latrobe, Pa.

▲ Mention Item NED-4261 when writing ▲

It's a fair question

WHY GET A WELLS No. 8? *Here's why!*—

VERSATILE—Wells No. 8 Metal Cutting Band Saw will cut a wide variety of metals in various shapes. In single or ganged-up work it will take overall sizes up to 8" x 16" rectangles or 8" rounds.

ACCURATE—Vibrationless operation assures uniform cutting.

FAST—The continuous cutting method employed insures a cool blade thus enables the operator to obtain maximum cutting speed for the type of stock being cut. Adjustable to 3 speeds.

ECONOMICAL—Cutting capacity and quality are paramount factors in choosing a WELLS. It requires but a ½ H.P. motor and 2' x 6' floor space.

Ask your mill-supply dealer to show you a WELLS, Model 8, in actual operation . . . you will like it.

Wells Has Established Leadership

To get complete specifications on WELLS Saws, write for the new WELLS Catalog.

A large stock of blades available at all times

WELLS MANUFACTURING CORPORATION
Wells METAL CUTTING BAND SAWS
1313 HARDING ST. • THREE RIVERS, MICHIGAN

▲ Mention Item NED-4262 when writing ▲

Another Battle Flag Goes Up the Mast

at UNION METAL

THE United States Maritime Commission has honored Union Metal men and women with its highest award, the Maritime "M" Pennant, for outstanding achievement in the production of tapered tubular steel booms for America's Liberty Ships.

Now that proud pennant, and the Flag of the Victory Fleet, fly over our war-busy plant—together with "Old Glory", the Army and Navy "E", and the Treasury Flag.

Ever since the war began, Union Metal's diligent and patriotic workers have given, and pledge themselves to continue to give, the best that's in them to help speed victory.

Their acceptance of these several honors has been in a spirit of the deepest responsibility toward our Merchant Marine, our armed forces, and our country. It is their will to produce the most possible of the best materials of war in the shortest time.

THE UNION METAL MANUFACTURING CO., CANTON, O.

Cargo Booms—Top Masts—Practice Bombs—Recoil Mechanisms—Gun Mounts—and, in peacetime, Steel Street Lighting Standards—Monotube Steel Pile Casings—Steel Skids and Boxes—Monotube Steel Poles for Distribution and Transmission Lines.

▲ Mention Item NED-4263 when writing ▲

FOR BETTER SERVICE IN *"HOT JOB"* HEALTH PROTECTION

THE *NEW* AND UNIQUE
M.S.A. Ceramic Model SALT TABLET DISPENSER

This new M.S.A. Ceramic Model Salt Tablet Dispenser is so designed that a padlock can be used to lock it on the wall bracket to prevent tampering with contents or unauthorized removal of the dispenser itself. The lustrous molded porcelain body, in attractive two-tone green, is non-corrosive and as simple to clean as a dish. Easy one-hand operation always dispenses one salt tablet—every time. Available in two sizes—500 or 1500-tablet capacity; easily refilled from convenient M.S.A. Salt Tablet Cartons. *Write for further details!*

FEATURING
- Tamper-Proof
- Weatherproof
- Dustproof
- Positive One-Hand Operation
- One Tablet Every Time
- Easy To Clean

MINE SAFETY APPLIANCES CO.
BRADDOCK, THOMAS & MEADE STS. • PITTSBURGH, PA.
District Representatives in Principal Cities

▲ Mention Item NED-4264 when writing ▲

SPECIFICATION *Rubber Goods* FOR WAR PURPOSES

For specialized capability to economically and quickly produce made-to-order rubber goods, send your product problem to Seiberling. You can count on the prompt service and modern production facilities which have made Seiberling the dependable source for scores of leading manufacturers. May we supply you material and manufacturing recommendations with cost estimate for your rubber product requirement.

SYNTHETIC OIL RESISTANT TUBING
★
SYNTHETIC SPONGE RUBBER
★
RUBBER GOODS MOLDED EXTRUDED DIPPED
★
Suitable Priority Required for Your Order Acceptance

SEIBERLING LATEX PRODUCTS CO.
DEPT. 5 AKRON, OHIO

▲ Mention Item NED-4265 when writing ▲

A BOX FULL OF GUARDS

THAT'S exactly right. This mysterious little metal box, part of a modern system of A.A.I. Automatic Alarms, is equal in vigilance and protection to an entire company of guards. To touch it or any part of a fence to which it is attached, is to transmit instant warning and signals and to dispatch help to the actual zone of disturbance. For guarding against sabotage, espionage and theft, there is no system of industrial plant and property protection so dependable, 24 hours a day, even during periods of blackout, storm and fog, as Automatic Alarms. Consider the safeguarding of your industry with this modern, dependable and relatively inexpensive protection.

SALES OFFICES:
Philadelphia, Chicago, Detroit, and Toronto, Canada.

Write for Literature

Licensed under DuPont and Astatic Patents

AUTOMATIC ALARMS *Inc.*

843 MARKET STREET, YOUNGSTOWN, OHIO, U. S. A.

▲ Mention Item NED-4266 when writing ▲

DESIGNED AND BUILT FOR SAFETY PLUS

★ Handling tasks are greatly simplified with "Ironbound" skids, platforms and trucks because they have been scientifically designed to eliminate usual hazards and risks. Built for maximum service under severe usage, "Ironbound" units feature rounded corners which prevent leg accidents to operators. A complete line of standard types are available, and specially designed units can be produced on short notice. Write for illustrated literature.

IRONBOUND BOX & LUMBER CO.
55 HOFFMAN PLACE HILLSIDE, N. J.

A completely assembled "Ironbound" skid with flush angles and countersunk bolts. Will handle loads up to 20,000 pounds.

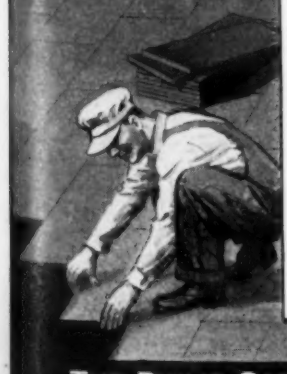
Sturdy steel bound construction assures handling heavy loads with ease. The bolted type construction makes each part easy to replace.

IRONBOUND SKIDS
AND MATERIALS-HANDLING EQUIPMENT

▲ Mention Item NED-4267 when writing ▲

New.... Floors Overnight

COVER OLD FLOORS WITH *Carey Elastite* INDUSTRIAL FLOORING



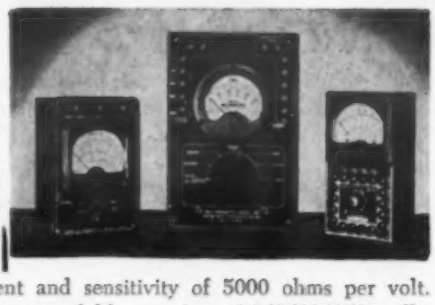
Rapidly applied with little or no interruption to plant operations. Ready for use immediately.

A heavy duty flooring —tough, durable, built to take it! Applied over a sub-base of concrete, wood or steel. Write for catalog. Address Dept. 79.

THE PHILIP CAREY MFG. COMPANY
Dependable Products Since 1873 • Lockland, Cincinnati, Ohio

▲ Mention Item NED-4268 when writing ▲

ELECTRICAL TESTERS



Compactness, simplicity, flexibility and accuracy are features of these three electrical test instruments. Pocket-size model 442 Multimeter (right) is compact multitester with 200-microampere movement and sensitivity of 5000 ohms per volt. Direct current ranges available are 0 to 0.3/6/30/150 milliamperes and 0 to 6/150/300/1500 volts. Alternating current ranges are 0 to 5/30/150/600 volts. Four decibel ranges are from minus 6 to plus 50 decibels.

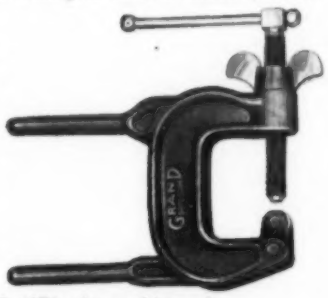
Model 471 output meter (left) has constant impedance of 4000 ohms. Resistors are precision wound and are accurate within 1 per cent. Five alternating current ranges of 0 to 1.5/6/15/60/150 volts are available by turning selector switch. Self-contained condenser for blocking direct current components is connected to separate terminals.

Model 481 volt-ohm test meter (center) has sensitivity of 50 microamperes. Precision wire wound resistors are accurate to 1 per cent. Direct current readings are from 0.1 to 1000 volts, 0 to 100 milliamperes and resistance measurements from 0.1 to 10 megohms. Energy for latter measurements is supplied by self-contained batteries. Made by **Radio City Products Co.**, 127 W. Twenty-sixth St., New York, N. Y.

▲ Mention Item NED-4269 when writing ▲

HEAVY DUTY CLAMP

Applicable for large, heavy duty work such as encountered in welding heavy plates, making of dies or handling bulky weldments, Heavy Duty Speed Clamp is of two-handed, lever-operated type. Combination of screw and lever action permits clamp to be set and locked for any given opening. It may be applied or released with single lever movement. Giant size of this clamp has 10½-inch opening. Made by **Grand Specialties Co.**, 3107 W. Grand St., Chicago, Ill.



▲ Mention Item NED-4270 when writing ▲

SAFETY EYE SHIELD

Impact resistant, light in weight, comfortable, non-inflammable, easily sterilized and non-distorting, StaSafe eye mask plastic eyeshields are adjustable to any head size. Should lens become scratched, it can be factory refinished at nominal cost. Mask is deep enough that it may be worn over prescription glasses. Design is such that lenses cannot touch table or other surface when this safety eye mask is laid down. One-piece construction is used. Made by **Standard Safety Equipment Co.**, Dept. N, 232 W. Ontario St., Chicago, Ill.

▲ Mention Item NED-4271 when writing ▲

Call your STRUTHERS-DUNN *District Engineer* ON RELAY-TIMER PROBLEMS

Need Relays and Timers to meet exacting war equipment specifications? Need advice on what units to use and how to use them to best advantage?

Then call, write, or wire your nearest Struthers-Dunn representative. He offers prompt, informed service on the largest, most diversified line of high quality Relays and Timers produced today. Ask him for a copy of the big 42-page Dunco Catalog and Relay Data Book.

IN 26 CITIES TO SERVE YOU

Main Office: STRUTHERS-DUNN, Inc., 1321 Arch St., Phila., Pa.
District Engineering Offices: Atlanta • Baltimore • Boston • Buffalo • Chicago • Cincinnati • Cleveland • Dallas • Denver • Detroit • Hartford • Indianapolis • Los Angeles • Minneapolis • Montreal • New York • Pittsburgh • St. Louis • San Francisco • Seattle • Syracuse • Toronto • Washington.

▲ Mention Item NED-4272 when writing ▲

★ ★ ★ ★ ★ A MATERIAL HANDLING SYSTEM

★ —one that hundreds of firms are using to knock high costs into a "cocked hat"—to save trucks, tires, gas, man power and money. The type of body shown here is for waste, rubbish, and bulky materials —only one of many different standard and special types built for hauling and dumping every conceivable type of material. One truck, equipped with a Dempster-Dumpster hoisting unit serves a flock of bodies placed at convenient locations for loading. When a body is loaded, truck unit goes into action for hoisting, hauling, automatic dumping and replacement and so on. An endless circle of truck service economy. Used in war and industrial plants from coast to coast. Write for completely illustrated manual showing what others are doing, in plants like yours, to cut material handling costs. Dempster Brothers Inc., 583 Shea Rd., Knoxville, Tennessee.

DEMPSTER DUMPSTER

▲ Mention Item NED-4273 when writing ▲

▲ Mention Item NED-4274 when writing ▲

Here is a machine that multiplies Man-Power—releasing men, women *and equipment* for other work. Speeds up production! Saves valuable hours now spent on copying and tracing by making photo-exact copies at small expense—in your own place of business, without delays.

Makes Photo-Exact Copies of Anything Written, Printed, Drawn or Photographed

APēCO makes copies up to 18"x22"—1 to 100 copies or more. No chance for error! Legally acceptable.

Foolproof Operation - Sturdy Construction
With our simple instructions, any inexperienced boy or girl can produce photo-exact copies of letters, blueprints, drawings, work orders, specifications, etc. No skill or darkroom needed.

PROMPT DELIVERY —Write for FREE folder now! Without obligation, ask to have an APēCO consultant call—located in all principal cities and Canada.

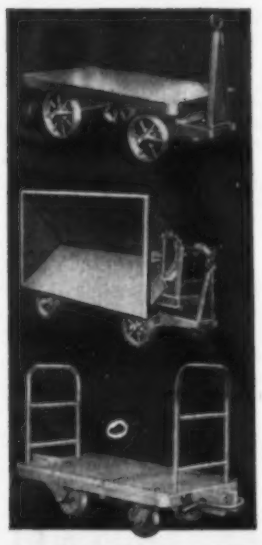
$55 F.O.B. CHICAGO

AMERICAN PHOTOCOPY EQUIPMENT CO.
2849 N. Clark Street Dept. BS-6 Chicago, Ill.

▲ Mention Item NED-4275 when writing ▲

RAW MATERIALS IN-
FINISHED PRODUCTS OUT-

Quicker-Easier-Safer!



• EWC Materials Handling Equipment is engineered for the job—backed by many years of experience in meeting handling needs. Today, when speed is doubly important to help America's fighters, EWC Trailers—in standard designs or with special features—are serving in Production Plants everywhere. To plan your hauling most efficiently, let us help you.

Write Dept. N for Bulletins, Prices, and Helpful Suggestions.

EWC TRAILERS

Electric Wheel Co., Quincy, Ill.

▲ Mention Item NED-4277 when writing ▲

FLASHLIGHT DRY CELLS GETTING SCARCE!

No Shortage of IDEAL RECHARGEABLE STORAGE BATTERIES for FLASHLIGHTS

Make sure of a future battery supply for your flashlights, with Unrestricted IDEAL Rechargeable Storage Batteries. They can be recharged again and again at convenient intervals, thus providing an "always fresh" battery, and a bright, steady, dependable light . . . Conserve Critical Materials.

Outlasts 400 Dry Cells!

With one IDEAL Rechargeable Storage Battery in heavy service, as much as $10 a year can be saved on each flashlight. IDEAL Storage Batteries fit any standard size flashlight cases using 1¼" size D dry cells. Many thousands in use in leading utility and industrial plants. Chargers for recharging the IDEAL Battery available in 1, 6 or 12-cell sizes.

Prompt Deliveries.

Write for Bulletin FBB 1242

GUARANTEED
IDEAL Sycamore
★ IDEAL COMMUTATOR DRESSER CO ★

1032 Park Avenue Sycamore, Illinois

Sales Offices in all Principal Cities

▲ Mention Item NED-4278 when writing ▲

The GROVE Pneumatic Gauge COMPARATOR

GROVE SIMPLICITY ACCURACY SAFETY

The Portable Method of Checking All Types Of Pressure Gauges

- Compact, portable and fully self-contained.
- Built-in high capacity rechargeable air cylinders.
- Precision laboratory test gauges accurate to within ¼ of 1% full scale.
- Completely equipped with tubing, connections and accessories.

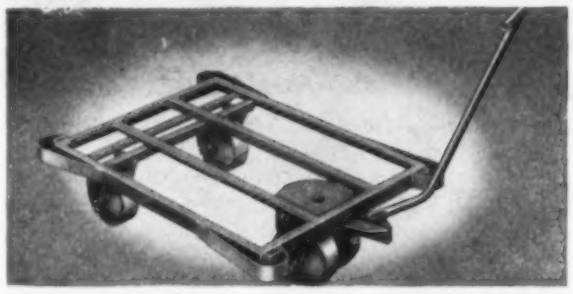
Figure the amount of time, trouble and money you save when you check your pressure gauges "in-place" without removing them from their panels or mountings; without disturbing existing line connections. The portable Grove Pneumatic Gauge Comparator gives you this fast accurate means of accurately checking any service gauge in service. Write today for Bulletin 300.

GROVE REGULATOR COMPANY
6833 Green Street, Emeryville, California
Branch Offices:
5644 Navigation Blvd., Houston, Texas—30 Rockefeller Plaza, New York City.

GROVE GROVE Pneumatic Gauge COMPARATOR

SERVICE TRUCKS

Widely adaptable for materials handling operations in manufacturing and other industrial plants, these service trucks have capacities of up to 3000 pounds. Fully loaded, trucks



can be handled easily by one man. Features include all welded construction, roller bearing machined wheels, oil packed fifth wheel forecarriage, corner bumpers and roller caster swivels. This latter feature is available only on push-pull type trucks. Wheels have 3-inch tire face so as to distribute load.

Push-pull type trucks can easily be equipped and used as portable stock room. Multiple cross bars can be provided for stock repairs on regular four caster wheel model. Made by **Wenthe-Davidson Engineering Co.,** 1459 N. Thirty-First St., Milwaukee, Wis.

▲ Mention Item NED-4280 when writing ▲

INDUSTRIAL LIGHT REFLECTORS

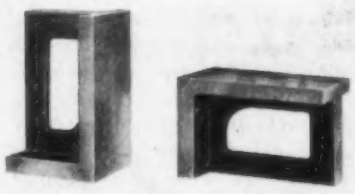
Design of these deep bowl reflectors confines and directs light rays onto work, prevents light losses and reduces light leakage outside of plant or building where they are used. Made in 7½, 10½, 15 and 17½-inch diameters, reflectors have shielded light center so as to afford sharp cut-off angle.

Shade holder types are made in several sizes for 60 to 200-watt lamps. Detachable socket types will accommodate 60 to 1500-watt lamps.

Standard finishes are green exterior and white interior and reflector surface is either enamel or porcelain enamel. Made by **Steber Mfg. Co.,** 2451 N. Sacramento Ave., Chicago, Ill.

▲ Mention Item NED-4281 when writing ▲

RIGHT ANGLE IRONS



Applicable for all types of work where square reference surfaces are needed, Universal right angle irons may be placed in almost any position with work clamped to surface for measuring. They may also be used as height blocks for measuring large work. Convenient hand grip is provided for moving.

Tools are made of semi-steel and specially heat treated. Ends and sides are precision ground so that they are square and flat. Made by **The Challenge Machinery Co.,** 201 Beech Tree Rd., Grand Haven, Mich.

▲ Mention Item NED-4282 when writing ▲

For Hydraulically Driven Machinery

VICKERS HYDRAULIC (OIL) PUMPS

Vickers Vane Type Pumps, having the exclusive pump design features which have revolutionized oil hydraulic power methods, are available in hundreds of sizes and types:

1 G.P.M. to 60 G.P.M. Pumps, to 1000 P.S.I. . . . . Bulletin 40-25
Two-Stage Pumps to 2000 P.S.I.—2 G.P.M. to 57 G.P.M. . . . Bulletin 40-16
Two-Pressure Large-Small Volume Pumps . . . . . Bulletin 38-14

Applications include hydraulically operated machine tools, presses, plastic and die casting machines, special processing machines, road machinery, etc.

Write for information covering your requirements.

VICKERS Incorporated
1456 Oakman Blvd. • DETROIT, MICHIGAN

HOW POR-OS-WAY IS DOING ON HIGH-SPEED STEEL CUTTERS

(Highlights from actual field report)

THE JOB: Grinding sets of Huther high-speed steel cutters for finning airplane cylinder barrels on a universal tool and cutter grinder.

THE WHEEL: POR-OS-WAY—7" x ½" x 1¼" 9A60HV2.

THE RECORD	POR-OS-WAY WHEEL	FORMER WHEEL
Production per man per hour	5 sets (20 pcs.)	3 sets (12 pcs.)
Pieces per dressing	8 to 12	3
Wheel life	8 hours	6 hours
Stock to be removed	.010"—.018"	Same
Depth of cut per pass	.003"	.001"
Rejects	None	0.5-1%
Operations eliminated	Cutting shoulder	——
Production increase	66⅔%	——

Remarks: Former wheel burned work. Por-os-way grinds cool, holds corner.

2 TO 5 TIMES MORE WAR PRODUCTION PER MAN PER MACHINE

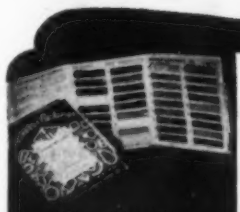
A. P. DE SANNO & SON, INC.
448 WHEATLAND STREET
PHOENIXVILLE, PENNSYLVANIA
Offices and Warehouses in Principal Cities

Copyr., 1943, A. P. de Sanno & Son, Inc.
*T. M. Reg. U.S. Pat. Off.

POR-OS-WAY* a new RADIAC* PRODUCT

▲ Mention Item NED-4284 when writing ▲

THERE IS NO "CEILING" ON SEALING MATERIAL PROBLEMS AT FEL-PRO



Send for the FEL-PRO Material Sample Folder

Check your needs against the 36 samples of sealing materials shown, with full description, data and suggested applications. If you don't find in it, what you are seeking, consult Fel-Pro's Special Development Staff.

Put It Up to FEL-PRO for solutions to problems involving GASKETS, MOULDING, STRIPPING, MECHANICAL PACKING and other types of Sealing Materials.

Don't hesitate to send your problem concerning gaskets, mechanical packing, stripping, etc., to Fel-Pro.

We are accustomed to being "called in" on jobs that others have said were impossible—and finding or developing a Fel-Pro material that overcomes every difficulty. Sometimes the material to fit the special requirements is already in the Fel-Pro line, and has been used successfully for similar conditions, by other manufacturers.

Other times, there is no such material; then our engineers proceed to analyze, experiment and test, until they develop one that fits the need. Such was the case with Syntoflex, Lignoflex, Special Coated Stripping and other new Fel-Pro materials that are successfully replacing critical materials—and for certain purposes proving superior to the sealing materials they replaced.

Put it up to FEL-PRO

FELT PRODUCTS MFG. CO., 1510 CARROLL AVE., CHICAGO, ILL.

▲ Mention Item NED-4285 when writing ▲

"CHICAGO" Means Precision!

Precision-made products and precision timing are helping our men win the war! Today "CHICAGO" STOCK PRODUCTS are performing an essential service at the "Front Line."

Steel and Brass Hexagon Head Cap Screws, Case Hardened Square Head Set Screws, Flat Head Cap Screws, Steel Taper Pins, Plain and Castellated Semi-Finished Nuts are just a part of the "CHICAGO" STOCK PRODUCTS line.

ARMY E NAVY ★ Order from your distributor ★

THE CHICAGO SCREW CO.
ESTABLISHED 1872
1026 So. HOMAN AVENUE CHICAGO, ILL.

Globe Platform Lift Speeds Machine Feed

No Stoop . . No Strain . . No Lost Motion with Stock Pile Raised to Proper Level

Greater machine output per hour . . . fewer accidents . . . less time and energy lost—these are some of the results obtainable when machine feed loads are raised to convenient working levels on a Globe Hydraulic Platform Lift with push button or foot pedal controls. This is only one of many ways in which Globe Lifts are helping to speed production and solve wartime manpower problems . . . enabling women and older workers to handle otherwise "heavy" jobs efficiently.

Write Globe Hoist Co., Queen & Mermaid Lane, Philadelphia, Pa., for illustrated bulletins.

GLOBE HOIST COMPANY
Philadelphia, Pa. Des Moines, Iowa

GLOBE LIFTS and ELEVATORS

▲ Mention Item NED-4287 when writing ▲

NO GREASE OR OIL FITTINGS on WISCONSIN HEAVY-DUTY AIR-COOLED ENGINES

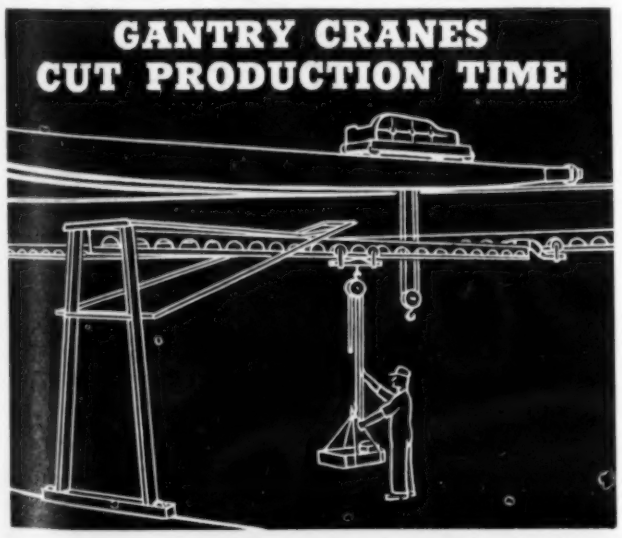
In today's war production set-up, even the saving of fractional manpower for servicing grease cups and oil fittings is important. And neglect of this attention can mean serious damage to irreplaceable production equipment. This can't happen with Wisconsin Engines because there are no grease cups or oil fittings; no lost manpower; no chance for human error or carelessness. Wisconsin Engines are protected by positive force-feed and splash lubrication.

MOST POWER Per POUND

WISCONSIN MOTOR Corporation
MILWAUKEE, WISCONSIN, U. S. A.
World's Largest Builders of Heavy-Duty Air-Cooled Engines

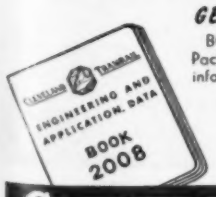
▲ Mention Item NED-4288 when writing ▲

GANTRY CRANES CUT PRODUCTION TIME



Inexpensive single-leg gantry cranes work under the heavy overhead crane and free it of much of the lighter work and eliminate costly waiting time of skilled workers. Several gantries can be purchased for the price of a single heavy overhead traveling crane. Built for hand or electric operation.

GET THIS BOOK!
BOOK No. 2008
Packed with valuable information . . .



CLEVELAND TRAMRAIL DIVISION
THE CLEVELAND CRANE & ENGINEERING CO.
1143 East 283rd Street Wickliffe, Ohio

CLEVELAND TRAMRAIL

PLASTIC ENVELOPE

Available in standard size of 10 by 12½ inches as well as special sizes ranging from 4 by 6 up to 16 by 20 inches, Kleer-Vu plastic envelopes protect all types of work orders, blueprints, charts and other data sheets from smudging or spoilage. Clear transparent plastic sheets are held together by lock-stitch reinforced leatherette binding. This protects edges of envelope from breaking or tearing.

These envelopes are made from flame-proof, soil-proof plastic and can be provided with straps and eyelets for hanging purposes. Cardboard backs for added rigidity, as well as additional pockets for assembly line checking, can be incorporated into special designs. Made by **American Plastic Products,** 553 S. Western Ave., Los Angeles, Calif.

▲ Mention Item NED-4290 when writing ▲

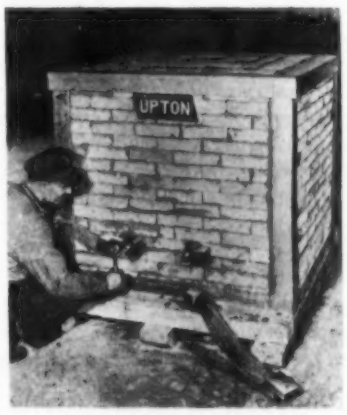
SUCTION CHUCKING

Vacuum chucking system facilities holding of articles for grinding, polishing, sanding and similar machining operations. Method is effective for holding metal, glass, plastic, wood or any other material as long as it has a reasonably flat surface so that suction has area upon which to exert its pulling strength.

Hollowed out flat chuck may be used in most cases having connection for air suction and series of countersunk holes in surface for holding purposes. For lathe work, rotating vacuum chuck may be used. Any degree of holding strength may be secured according to weight of article to be worked upon and in accordance with strain exerted by grinding, polishing or other operation. Made by **Leiman Bros.,** DD-133 Christie St., Newark, N. J.

▲ Mention Item NED-4291 when writing ▲

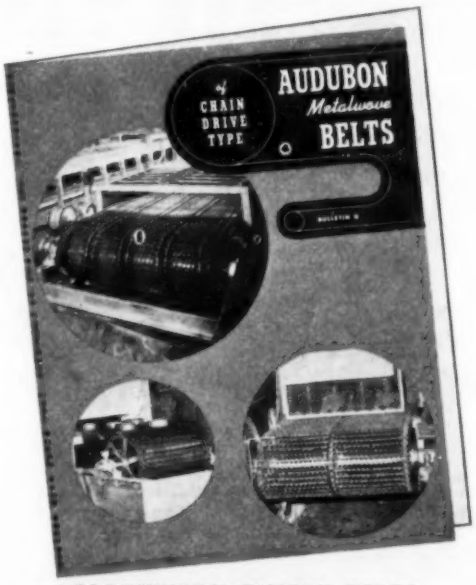
SALT BATH FURNACE



Need for changing electrodes is eliminated through design in this sealed-electrode type salt bath furnace. Improved operating efficiency and hardening of longer tools than could formerly be handled are claimed features of these furnaces.

Electrodes are sealed through sides of furnace so that they are located beneath surface of salt or at bottom of pit where heated portion is not exposed to air. This location practically eliminates oxidation of electrodes which are cooled by circulated cold water. Furnaces may be used for heat treating operations requiring temperatures of from 1200 to 2500 degrees Fahr. Furnace may be built to any reasonable depth without increase in cross sectional area. Made by **Upton Electric Furnace Div.,** 7439 Melville Ave., Detroit, Mich.

▲ Mention Item NED-4292 when writing ▲



"CLOCKWORK-TIMED" BELTS

Chain Driven, Audubon Metalwove Belts assure synchronization of various continuous conveying or processing operations, such as washing, drying, removing heat-treated parts from oil quench tanks, forgings to and from sand blast equipment, food products through ovens, quick freezing, dehydrating, packing, canning; carrying metal parts through furnaces, cooling chambers, etc., or along assembly lines. They can "speed-up" your war production on a peace-time economy basis. Our Bulletin G describes recommended types. Write for it; then You Provide the Priority and We'll Produce.

AUDUBON WIRE CLOTH CORPORATION
Subsidiary of Manganese Steel Forge Co.
2803 CASTOR AVE., PHILADELPHIA, PA.

Soldering 'Em to STAY Soldered with KESTER

• The vital function of solder is to stay put, come what may—and that's exactly what Kester Cored Solders are scientifically compounded to do. They're in action, night and day, on every battlefront from the Arctic to the Tropics.

• Kester Cored Solders are right for every soldering job. They're available in a wide range of core and strand sizes, fluxes and alloys, one combination of which is exactly suited to every requirement, however special.

• Electrical circuits installed with Kester Rosin-Core Solder are free from terminal resistance; service difficulties of every sort are minimized. Kester Acid-Core Solder for general application makes a tight, clean, permanent union.

• Kester's 44 years of highly specialized solder experience is at your command. Consult Kester engineers freely on any soldering question.

SILVER-LEAD ALLOY—Kester is prepared to offer, for test on your work, a wartime solder of silver and lead, in cored and wired form.

KESTER SOLDER COMPANY
4249 Wrightwood Avenue, Chicago, Illinois
Eastern Plant: Newark, N. J. Canadian Plant: Brantford, Ont.

KESTER Cored Solders
STANDARD FOR INDUSTRY

▲ Mention Item NED-4294 when writing ▲

Built-In Circuit PROTECTION

MOTOR PROTECTION ESSENTIAL TO CAPACITY PRODUCTION

HEINEMANN "Re-Cirk-it" fully electro-magnetic Circuit Breakers prevent burnouts and locked rotors by opening instantaneously on short circuits. Time delay permits momentary harmless overloads and starting surges. Made in all ratings from 250 milliamps. to 35 amps. on 110 volt AC.

Walker-Turner Radial Woodworking Machine illustrated is protected with Heinemann "Re-Cirk-it" Auxiliary Breaker.

HEINEMANN CIRCUIT BREAKER CO.
Subsidiary to Heinemann Electric Co. Est. 1888
106 PLUM STREET TRENTON, N. J.

▲ Mention Item NED-4295 when writing ▲

Wire Forms OF ANY SHAPE PRODUCED BY MUEHLHAUSEN

★ Muehlhausen's ability to produce a variety of wire forms permits greater latitude in the design of war products. Skillful tool makers and extensive forming equipment assure the exact wire form in sufficient quantities to meet practically any requirement.

MUEHLHAUSEN SPRING CORPORATION
Division of Standard Steel Spring Company
550 Michigan Avenue, Logansport, Ind.

MUEHLHAUSEN SPRINGS
EVERY TYPE AND SIZE

BRUSH SURFACE ANALYZER

PRECISION
for War and the Peace to come

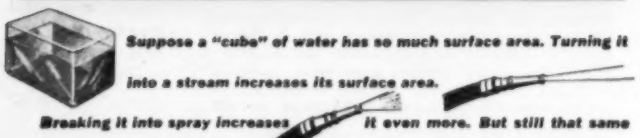
The Brush Surface Analyzer provides a convenient, accurate and permanent chart record of the characteristics of finished surfaces, indicating in millionths of an inch the height, depth, and the pitch of each individual surface irregularity.

Write for complete details.

THE BRUSH DEVELOPMENT CO.
3311 PERKINS AVENUE • • • CLEVELAND, OHIO

▲ Mention Item NED-4297 when writing ▲

Now WATER Kills OIL FIRES
because WaterFOG obeys this rule of physics
THE SPEED WITH WHICH WATER ABSORBS HEAT INCREASES WITH THE SURFACE AREA EXPOSED



Suppose a "cube" of water has so much surface area. Turning it into a stream increases its surface area. Breaking it into spray increases it even more. But still that same amount of water is not yet in proper form for fighting flammable liquid fires.

It takes WaterFOG — extremely tiny particles — to give that original quantity of water enough surface area to take heat from an oil fire fast enough!

Furthermore, being light, WaterFOG stays longer in the combustion zone — unlike larger drops which plunge into the liquid, agitating it, encouraging vaporization. WaterFOG, floating down onto the surface, absorbs a maximum amount of heat from the flames and lowers the temperature of the liquid. Then, changing into steam, it expands and envelops the fire in a smothering blanket.

Thus WaterFOG attacks fire 3 ways:
1. **Quenches the burning vapors**
2. **Lowers Liquid temperature to retard vaporization**
3. **Diminishes supply of oxygen**

WaterFOG — created by impinging streams of water — is engineered in correct particle size, fog pattern, and velocity for your conditions. Fixed piping installations, hose nozzles and applicators. Rockwood installations approved by Underwriters' Laboratories and Associated Factory Mutuals, used by Navy, Coast Guard, hundreds of industrial plants. WaterFOG is safe to use on electrical fires. Write for Bulletin 123.
Executives! A colored movie (16 mm.) showing tests of Rockwood WaterFOG is available.

ROCKWOOD SPRINKLER COMPANY
44 Harlow Street, Worcester, Mass.
Specialists in Fire Protection Engineering, Equipment and Installation since 1907

ROCKWOOD Water FOG

Water Engineered by Rockwood Cools. Confines. Smothers Oil Fires

▲ Mention Item NED-4298 when writing ▲

BLUEPRINT MACHINE

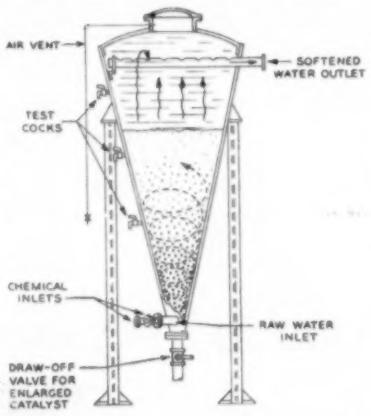
Adaptable for medium production requirements, Model 8-Q printer will expose blueprints, direct process prints and sepia negatives ranging up to 54 inches wide. Printing speeds of from 6 inches to 32 lineal feet per minute are obtainable.

Machine incorporates revolving contact and uses quartz high pressure mercury vapor lamp which requires approximately 75 watts per lineal inch of printing width. Forced ventilation assures efficient light output. Machine is so designed that it may be operated by inexperienced help. Made by **Paragon-Revolute Corp.**, 77 N. South Ave., Rochester 4, N. Y.

▲ Mention Item NED-4299 when writing ▲

WATER PURIFYING SYSTEM

Providing low-cost soft water to small communities as well as to industries, Spiractor equipment takes mineral-laden hard water, spirals it through inverted cone and delivers it in softened condition. Equipment avoids formation of sludge and thus eliminates need for sludge disposal. Unit requires comparatively small floor space and water is softened in from five to ten minutes, as compared with several hours required by older methods.



Also announced is Demineralizing process which is entirely chemical in action. This process is claimed to remove need for distilling water. Demineralizing process requires passing of water through beds of chemicals to remove harmful minerals. Cost is claimed to be as low as 5 per cent of that required for distillation.

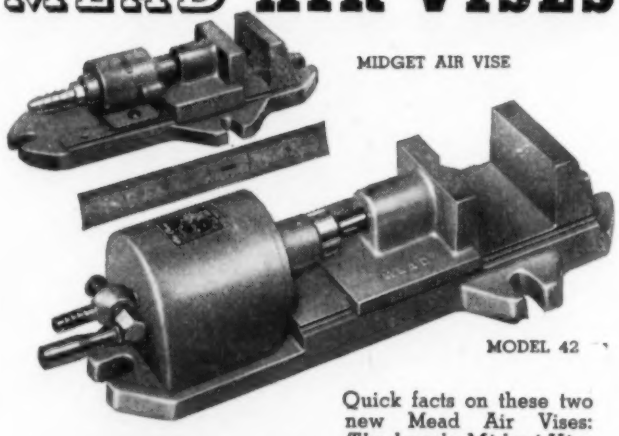
Two steps are required to produce synthetic distilled water. In first step, calcium, magnesium and sodium ions in tap water are removed by ion exchange zeolites. Second step involves absorption of resulting acids. Final water is adaptable for industrial processes, boiler feed water, manufacturing and similar uses.

Demineralizing process is claimed to be applicable in providing water for storage batteries, alcohol de-proofing, brewing, preparation of photographic film, soda water and other consumer products. Adaptations of process are also found in special applications such as purifying sugar and gelatin, recovering precious metals from industrial wastes and preparing vitamins. Made by **The Permutit Co.**, 330 W. Forty-second St., New York, N. Y.

▲ Mention Item NED-4300 when writing ▲

Announcing

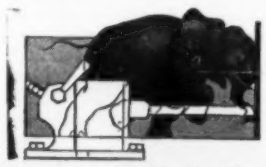
MEAD AIR VISES



MIDGET AIR VISE

MODEL 42

Quick facts on these two new Mead Air Vises: *The handy Midget Vise* measures only 7½". Holds small work for light drilling operations, screw-slotting and similar work on bench milling machines. *Model 42 Air Vise* has adjustable stroke, 0" to 2". Maximum capacity 3½". Hand or foot control. Dovetail ways give smooth action, assure parallel grip. Many new Mead Air Devices described in our new AIR POWER Catalog—just out. Write for your copy.



MEAD SPECIALTIES COMPANY
15 SO. MARKET STREET
DEPT. 83-NA • CHICAGO 6, U.S.A.

▲ Mention Item NED-4301 when writing ▲

Prompt Delivery

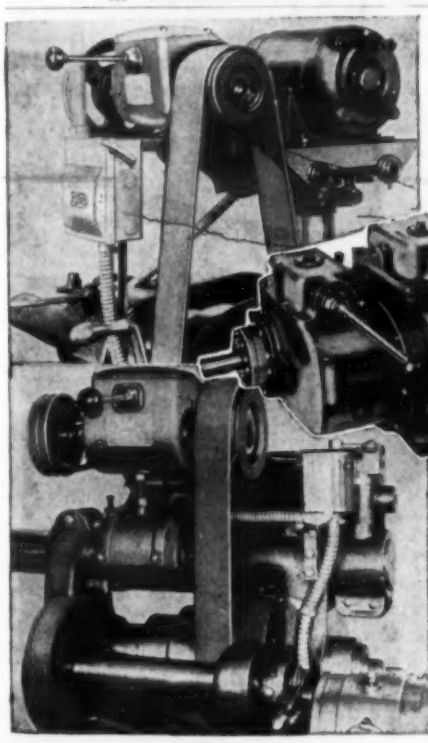
G.E. TEXTOLITE

General Electric Plastics is prepared to make delivery of Textolite laminated sheet, tube and rod stock during July and August in substantial quantities.

For further information write Section K-8, 1 Plastics Avenue, Pittsfield, Mass.

PLASTICS DIVISIONS
GENERAL ELECTRIC
PD-48A

▲ Mention Item NED-4302 when writing ▲



Western MASTER (1-5 h.p.) transmission including standard bracket f.o.b. Detroit 95.00

Western SUPER (10-30 h.p.) suitable for replacing gear boxes on large boring mills, radials, Ingersol milling machines etc. to motorize large slotters, engine and turret lathes.

Western MAJOR (5-10 h.p.) transmission including standard bracket f.o.b. Detroit 145.00

SEND FOR NEW FOUR PAGE CATALOG . . .
prompt deliveries on high priorities

up to 30 h. p. For Motorizing Lathes, Milling Machines, Shapers, Turret Lathes, Radial Drills, Slotters, Bolt Cutters, Gear Cutters, Die Sinkers, Boring Mills, etc.
WESTERN TRANSMISSIONS
3400 SCOTTEN, DETROIT, MICHIGAN

▲ Mention Item NED-4303 when writing ▲

YOU GET
S-P-E-E-D WITH EFFICIENCY
IN BLAST CLEANING
EQUIPMENT MADE BY

PANGBORN

World's Largest Manufacturer of Blast Cleaning and Dust Control Equipment

The Pangborn Line ranges from this big ROTOBLAST Barrel on down through Tables, Rooms and Special Machines to the small, compact, blast cleaning Cabinet. Hand in hand go the many sizes of Dust Control Equipment, to present the perfect team for SPEED and EFFICIENCY.

PANGBORN CORPORATION
HAGERSTOWN • • • • MARYLAND

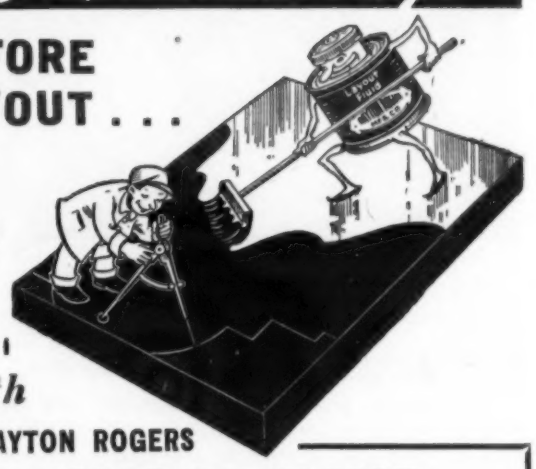
▲ Mention Item NED-4304 when writing ▲

Fenwal INCORPORATED 70 MAIN ST. ASHLAND MASSACHUSETTS

▲ Mention Item NED-4305 when writing ▲

No Polishing!

BEFORE LAYOUT . . .



with

DAYTON ROGERS

LAYOUT FLUID

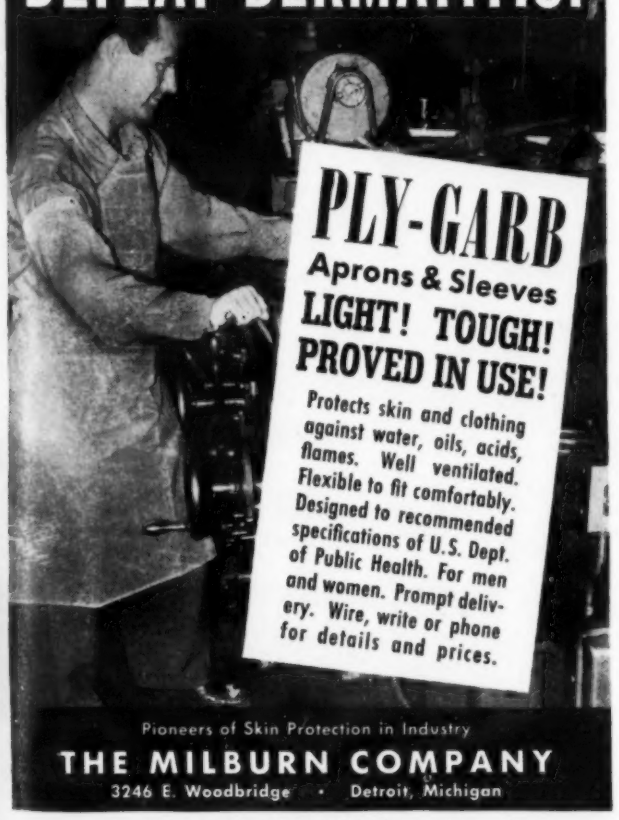
Speed up your lay-out work, relieve eye-strain and improve accuracy with Dayton Rogers LAYOUT FLUID. No time wasted polishing surface. Just wipe off and apply this deep Dye Blue with brush. DRIES INSTANTLY! Use on steel, brass, aluminum, stainless steel, tin, copper. Also splendid for periodic piece inspection to check accuracy of production runs.

PRICES—Handy 4 oz. Brush-in-Can, 40c. Pint, 60c. Quart, 90c. Gallon, $2.50. Circular on request.

DAYTON ROGERS MANUFACTURING CO. 2837 12th Ave. S., Minneapolis 7, Minn.

▲ Mention Item NED-4306 when writing ▲

DEFEAT DERMATITIS!



PLY-GARB Aprons & Sleeves LIGHT! TOUGH! PROVED IN USE!

Protects skin and clothing against water, oils, acids, flames. Well ventilated. Flexible to fit comfortably. Designed to recommended specifications of U.S. Dept. of Public Health. For men and women. Prompt delivery. Wire, write or phone for details and prices.

Pioneers of Skin Protection in Industry

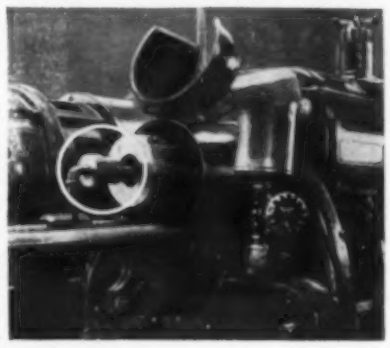
THE MILBURN COMPANY

3246 E. Woodbridge • Detroit, Michigan

▲ Mention Item NED-4307 when writing ▲

NEW Applications

ROTATING JOINT



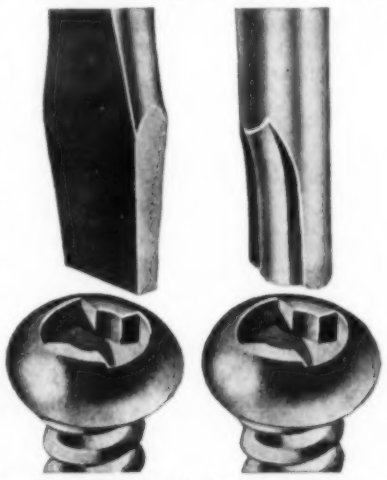
Machining of inside surfaces of internally cored castings or steel stock when it is difficult to provide cutting oil or coolant at spot where cutting action takes place is facilitated through use of Johnson rotary pressure joint. This application is of particular value where deep boring, drilling or reaming is required. Illustration shows use of joint for introducing cutting oil into spindle of turret lathe and thence to cutting tools at working end. This same arrangement is suitable for other machines handling similar operations.

Rotary joint is of packless type. Two carbon graphite rings eliminate need for packing and are self-lubricating. Pressure within joint acts as sealing force. Angular and lateral misalignment of piping is compensated for by joint. Made by **Johnson Corp.**, Three Rivers, Mich.

▲ Mention Item NED-4308 when writing ▲

CLUTCH HEAD SCREWS

Design of clutch head screws is such that either assembly bit or standard type screwdriver may be used for inserting screws. In addition to eliminating driver slippage, these screws have advantages of speed and economy. Clutch type slot is deep and permits easy entry of assembly bit. Self-centering feature affords safety and speed when driving. When center pivot type assembly bit is used, there are no sharp fins or thin edges to fail. Up to 200,000 operations per bit without failure are claimed, according to tests.



Clutch head design is such that slight reversed movement of driver unites screw with bit, where it remains in position until power of driving automatically releases hold. Positive frictional lock permits insertion of screws in places which are difficult of access. One hand driving is possible.

These screws are available in wide range of head types as well as in various standard and special thread designs. Made by **United Screw & Bolt Corp.**, 2511 W. Cullerton St., Chicago, Ill.

▲ Mention Item NED-4309 when writing ▲

HOW TO Slash BADGE COSTS . . .

Most plants today (and probably yours, too) are confronted with a high ratio of employee turnover. Our tamper-proof re-usable photo badges will drastically reduce your badge costs. They can be opened and closed—only with a tool we furnish—for changing photos. The units save valuable time by permitting quick change of colored paper inserts when shifting employees to different departments. They eliminate needless waste of badge materials.

Re-usable badges will save, within a few months, the entire cost of a new badge installation.

SOLID METAL BADGES, without photos, also available.

Write, telegraph or telephone for helpful suggestions, samples, and quotations in quantities you specify.

TOOL CHECKS . . . Made from tough fibre . . . any size, numbered and lettered to your specifications.

AMERICAN EMBLEM COMPANY, INC.

LIBERTY BOULEVARD • UTICA, N. Y.

Sales Offices . . . New York • Philadelphia • Chicago • Detroit St. Louis • Washington, D. C. • Representatives in Major Cities

▲ Mention Item NED-4310 when writing ▲

Easily heard through a confusion of sounds —THE FEDERAL Type "D" Siren

The rugged industrial alarm and call siren with grease sealed, ball bearing, ½-hp. motor; weather-proof housing; and, adjustable bracket. *Write for bulletin.*

FEDERAL ELECTRIC CO., INC.

SIREN HEADQUARTERS

8711 So. State St. • Chicago, Illinois

▲ Mention Item NED-4311 when writing ▲

Amazing S-22 Synthetic ETCHING STAMPS

Thousands of our new "S-22" Synthetic stamps now in service have proved that this new material outlasts rubber or other synthetics by from 3 to 4 times, when used with acid etching inks. Order "S-22" next time you need inspection stamps.

INSPECTOR'S KIT

Made of acid proof, non-critical material, this new Kit holds stamps, etching ink, ink pad and neutralizer. Inexpensive, compact and convenient. Write for quotation.

Write for Bulletin S - - Catalog 146

This valuable bulletin illustrates the various styles of stamps available. Write for your copy today.

JAS. H. MATTHEWS & CO.

Pittsburgh, Pa.

District Sales Offices

Cleveland Detroit Hartford Birmingham

▲ Mention Item NED-4312 when writing ▲

SET SCREWS of any size or style you need are made by CLEVELAND

Cup·Oval Cone Flat·Dog

● Besides your advantage of being able to secure a wide range of styles and sizes in square head or headless Cleveland Set Screws, the assurance of quality is important. Made to close tolerances—Class 3 fit—carefully case hardened—high tensile strength—they meet the most rigid requirements.

Write for samples and prices

THE CLEVELAND CAP SCREW COMPANY

2917 EAST 79th STREET • CLEVELAND, OHIO

Warehouses: Chicago, Philadelphia, New York, Los Angeles

Cleveland Cap Screws

Set Screws and Special Upset Parts

Specialists for 26 years in Headed and Threaded Products

▲ Mention Item NED-4313 when writing ▲

COMPLETELY machined and finished Bronze Bearings for all types of industrial machinery, machine tools and electric motors. Factory-Finished Bearing Bronze Bars. Sizes to meet every requirement. Available from leading local wholesalers. Catalog on request. The Bunting Brass & Bronze Company, Toledo, O. Warehouses in Principal Cities.

Bunting

▲ Mention Item NED-4317 when writing ▲

The TRUTH -quickly told!

LOADS can be accurately weighed on a Fairbanks Dial Scale as fast as they can be moved on and off the platform. The pointer comes quickly to rest. Correct weight is clearly indicated on the dial—no mental calculations are necessary. When equipped with a Printomatic (as illustrated above) the scale *reads itself* and automatically *prints* the correct weight on a ticket or tape, leaving no chance for human error. Lasting accuracy—year after year of accurate weighing—is assured by simplicity of design, sturdy construction—and 113 years of scale building experience.

Fairbanks, Morse & Co., 600 South Michigan Avenue, Chicago. Branches with service stations throughout the United States and Canada.

FAIRBANKS-MORSE Scales

DIESEL ENGINES · PUMPS · MOTORS · GENERATORS · SCALES · WATER SYSTEMS · FARM EQUIPMENT · STOKERS · AIR CONDITIONERS · RAILROAD EQUIPMENT

▲ Mention Item NED-4318 when writing ▲

NEW Processes AND Materials

SALT TABLET PACKET

Containing twenty-four 10-grain heat tablets, this Fairway Pocket-Pak is of vest pocket size. It is spill proof, dust tight and easily operated with one hand to provide single tablet delivery. This package is offered to provide sanitary tablet distribution among workmen in small isolated groups where they are subject to heat fatigue. Made by **Standard Safety Equipment Co.**, Dept. N., 232 W. Ontario St., Chicago, Ill.

▲ Mention Item NED-4319 when writing ▲

SHIPPING CONTAINER COATING

Especially developed for moisture and water proofing wooden crates and boxes, Carbozite coating is used on unseasoned lumber. It seals in natural moisture and retards drying out, shrinkage and warpage. Coating can be sprayed with high pressure gun and dries to touch in 30 minutes.

Also available is Sealing Mastic which is applied with pressure gun or trowel. It creates perfect seal and prevents moisture entrance or exit where cracks or other irregularities occur in box construction. Remaining pliable indefinitely, material permits easy removal of cover of box. Made by **Carbozite Corp.**, 956 First National Bank Bldg., Pittsburgh 22, Pa.

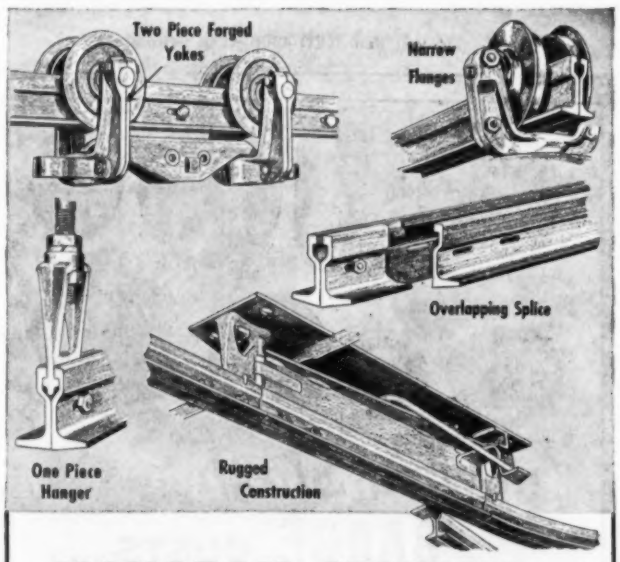
▲ Mention Item NED-4320 when writing ▲

FLOOR SURFACER

Capable of resisting penetration of acid, water, oil and grease, AWOG industrial floor coating material facilities cleaning and affords sanitation. In addition to this imperviousness, material is further claimed to be smooth and dustless. It will withstand heavy traffic conditions encountered in factory aisles and runways.

Surfacer can be used for new floors; for overlays on concrete, brick, stone or wood, and for repairing or resurfacing areas of any size. Made by **Flexrock Co.**, Dept. NED, 2303 Manning St., Philadelphia 3, Pa.

▲ Mention Item NED-4321 when writing ▲



MONORAIL SYSTEMS
FABRICATED TO FIT

WRITE FOR Blue Book illustrating hundreds of MonoRail installations.

American MonoRail is fabricated to fit any handling job. Systems are available for hand or electric operation, including rubber wheel drive with local or remote control furnishing many automatic features.

THE AMERICAN MONORAIL CO.
13118 Athens Ave., Cleveland 7, Ohio

▲ Mention Item NED-4322 when writing ▲

COMPRESSED AIR DRIED TO *BELOW* ZERO DEWPOINTS

- For instrument lines
- For process work
- For inspection and assembly departments

Kemp KSG Silica-Gel Adsorptive Dryers are the standard in modern industrial applications. For Bulletin T25C write **The C. M. Kemp Mfg. Co., 405 East Oliver Street, Baltimore, Maryland.**

KEMP of BALTIMORE

▲ Mention Item NED-4323 when writing ▲

THE handy contact-adjustment in these type LWZ Welder Contactors gives *consistent* welding results—through high speed, uniform opening. Large bearing assures long life, free-movement of main shaft.

Contacts are pure copper, cold-formed and specially processed to give high Brinnell hardness throughout their thickness. *LINE-ARC* principle of arc-handling. Heavy duty construction throughout for low upkeep, long and satisfactory service. Ask for Bulletin 1211—EC&M Welder Contactors.

THE ELECTRIC CONTROLLER & MFG. CO.
CLEVELAND, OHIO
BRAKES · MAGNETS · LIMIT-STOPS · MOTOR-CONTROL

▲ Mention Item NED-4324 when writing ▲

COMMERCIAL SHAPE BOOK #4

A list of steel shapes available without die or tool charges has been printed. We call this booklet, Shape Book #4. This shows an economical way of buying stampings, and Purchasing Agents, Engineers, and Designers should have a copy.

If you do not have a copy—WRITE

LET US TELL ABOUT THIS SERVICE
WRITE FOR SHAPE BOOK #4

THE COMMERCIAL SHEARING AND STAMPING COMPANY.
YOUNGSTOWN · OHIO · U.S.A.

▲ Mention Item NED-4325 when writing ▲

With Simplex Hydraulic Jacks

"Easy" Does It!

3, 5, 8, 12 and 20-ton capacities, 9" high. All lift over 6" *plus* extension of telescoping screw. 20-ton is 10" high, has no extension screw.

Safe and rugged, yet light. For lifting and lowering where "close-to-floor" toe lift is not necessary. Non-deteriorating packing seals. Lever bar fits slot head release valve.

Templeton, Kenly & Company
Chicago, Ill.
Better, Safer Jacks Since 1899

Simplex LEVER - SCREW - HYDRAULIC Jacks

▲ Mention Item NED-4326 when writing ▲

...keeps materials flowing in

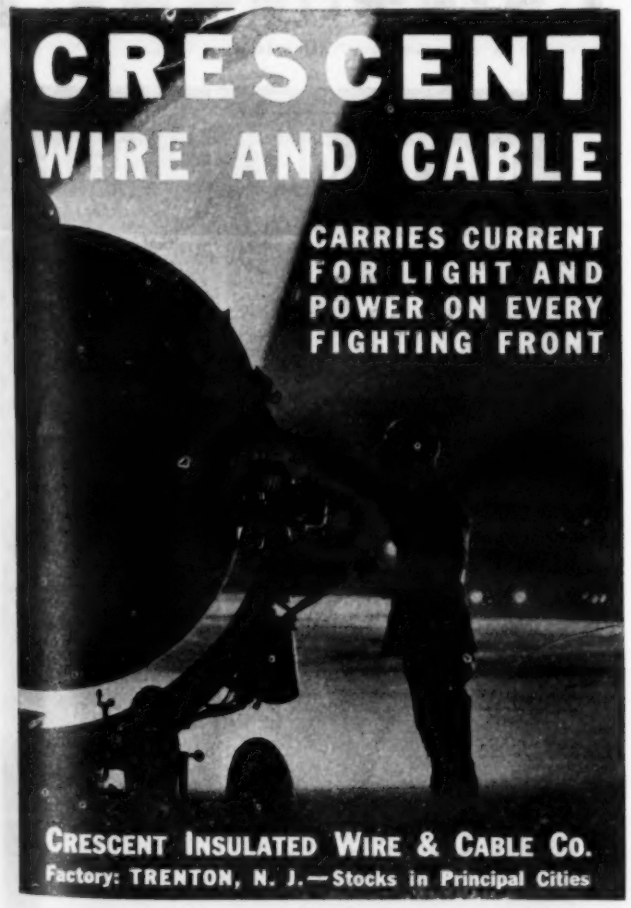
WAR PLANTS

EASILY operated by unskilled men or women, compact and highly maneuverable, the Chore Boy meets today's requirements perfectly.

LOW FIRST COST, LOW OPERATING COST
LOW MAINTENANCE . . . SPEEDS TO 15 M.P.H.

THE BUDA COMPANY
HARVEY (Chicago Suburb) ILLINOIS

▲ Mention Item NED-4327 when writing ▲



▲ Mention Item NED-4328 when writing ▲

New Processes & Materials

RUBBER SUBSTITUTE

Capable of being made in any paint factory from vegetable oils and without use of critical materials, Kem-Pol is offered as substitute, replacement or extender for natural, synthetic and reclaimed rubber for conditions where low tensile strength and elongation are permissible. Among uses suggested for this material are treads, mats, hose, braided tubing, pads, erasers, food closures, gaskets, felting, fabric coatings, taps, sealing compounds, adhesives, stoppers and cements.

Four types of this material are available. No. 14 is amber colored viscous liquid which is easily soluble in aliphatic and aromatic hydrocarbons. It may be emulsified and is intended for use as adhesive. No. 54 is viscous, tacky, semi-solid gel-like material which is also soluble and will emulsify. It may be used as adhesive or cured, milled and molded. No. 11 is most viscous of untreated polymers. This tacky solid is ruby red in color and is soluble with difficulty in aromatic hydrocarbons. It can be emulsified and preferred use is in preparation of mill stocks and molded goods, although it may be used in adhesives. No. 11-41 MP is available for those not equipped to handle viscous, tacky, polymers as mentioned above. This pretreated polymer is dry, cream to tan colored sheet, which has only slight tack. It may be worked directly on rubber mill without pretreatment. Made by **Sherwin-Williams Co.**, Dept. E., 101 Prospect Ave., N. W., Cleveland, Ohio.

▲ Mention Item NED-4329 when writing ▲

CRACK SEALING TAPE

Easily applied around doors, windows, transoms or any crevices where cold air could seep through, Mortite tape will prevent heat loss in all types of buildings. Made of pliable plastic and supplied in convenient coil that unrolls like ribbon, tape requires no tacking or tools for application. It is pushed into place and remains there without chipping, cracking or drying out. It remains pliable so that it can be removed, as required, at the end of season and used again.

In addition to insulating and weatherstripping applications, it may be used for glazing, caulking, gaskets, hole filling, plugging cracks and similar uses. Box containing 80 feet sells for $1.25. Made by **J. W. Mortell Co.**, 526 Burch St., Kankakee, Ill.

▲ Mention Item NED-4330 when writing ▲

Compare this NEW SPEED with the old way

True-Surfacing
FREEHAND!
with
PORTER-CABLE
Wet Belt Surfacer

The two faces of the aluminum casting shown must be finished true flat, at exact right angles and glass smooth. With a Porter-Cable Wet Belt Surfacer, these rigorous requirements are met with only one application of each face to the belt, and *without mounting the piece in a fixture.* Entire area finished at one time!

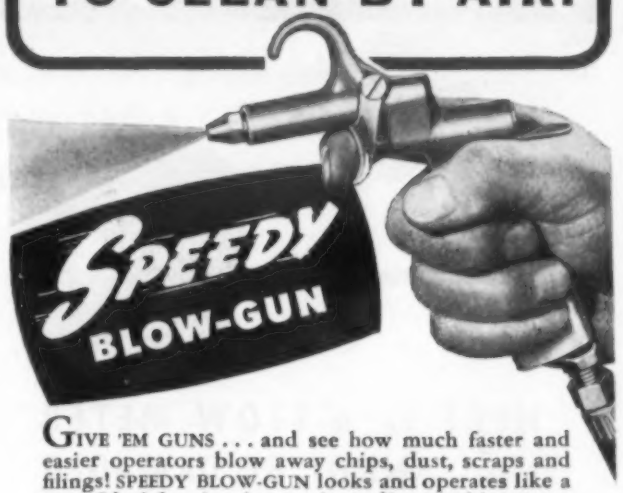
Learn about this amazingly adaptable precision tool that is replacing or supplementing many operations on millers, planers, surface grinders, shapers—relieving them for other work—speeding the entire production flow.

Send for our new booklet, WET-DRY BELT SURFACING.

PORTER-CABLE MACHINE CO.
1710-8 N. Salina St., Syracuse, N. Y.

▲ Mention Item NED-4331 when writing ▲

NEW WAY TO CLEAN BY AIR!



GIVE 'EM GUNS . . . and see how much faster and easier operators blow away chips, dust, scraps and filings! SPEEDY BLOW-GUN looks and operates like a gun. Ideal for cleaning castings, dies, machine parts, tools, machines, motors; preparation for painting, etc. Extremely rugged, simple and light. Positive, easy trigger action. Comfortable pistol grip, and hang hook. Operates on any pressure up to 250 lbs. Air nozzle may be interchanged with long spouts for deep cavities. Prompt delivery. Each.... $2.50

W. R. BROWN CORP.
5716 ARMITAGE AVE., CHICAGO, ILLINOIS

MAKERS OF SPEEDY AIR VISE • SPEEDY PAINT SPRAYERS

▲ Mention Item NED-4332 when writing ▲

You can handle jobs like these faster, more accurately—at lower cost with the

SUNNEN Precision Honing Machine

Carbureter Idler Valve Jet. Hole is honed after reaming for smooth action.

Header Die. Life of header dies increased 3 to 9 times over lapping. Knock out pin breakage practically eliminated.

Stainless Steel Load Compensator Valve Seat. Hole is honed to .0002" limit.

Bearing. A very small part. 2 micro inch finish necessary.

Aircraft Valve Guide. Valve tappet roller pin hole honed to 6 micro inch finish.

Cast Iron Valve Stem Guide. 1/2 to one thousandth removed — 220 pieces per hour. Better finish and straighter hole.

Hydraulic Valve. Previous method of grinding threw radius on edge of "windows." Sunnen honing eliminated trouble.

Calculator Machine Gears. Cut from hole which is reamed and then honed. Honing maintains same pitch line concentricity.

Hones and finishes internal cylindrical surfaces from .185" to 2.625" in diameter — with a guaranteed accuracy of .0001". Produces a super-smooth finish of 2 to 3 micro inches.

Does not require skilled labor — in many plants girls in 'teens are handling jobs in "tenths."

No jigs or fixtures needed — work is held in hands. Relieves big internal grinders for other jobs.

Low in cost, economical to operate. Fast — can be "set up" for any size in its range in less than a minute.

Let a Sunnen engineer check your job in your plant with this equipment — or write for bulletin giving complete information.

SUNNEN

SUNNEN PRODUCTS COMPANY
7931 Manchester Avenue, St. Louis, Mo.
Canadian Factory: Chatham, Ontario

▲ Mention Item NED-4333 when writing ▲

Your Search is Ended

HERE is a FLOW METER that CANNOT BE DAMAGED

by sudden overload or Reverse Flows

You can depend on ADSCO Flow Meters to maintain their accuracy under the most severe operating conditions.

Whether you measure steam, water, compressed air, high pressure gas flows or fluids, its exclusive simplified "free floating" meter mechanism gives it sustained operating accuracy over an exceptionally wide range of flow. Write for bulletin 35-83D.

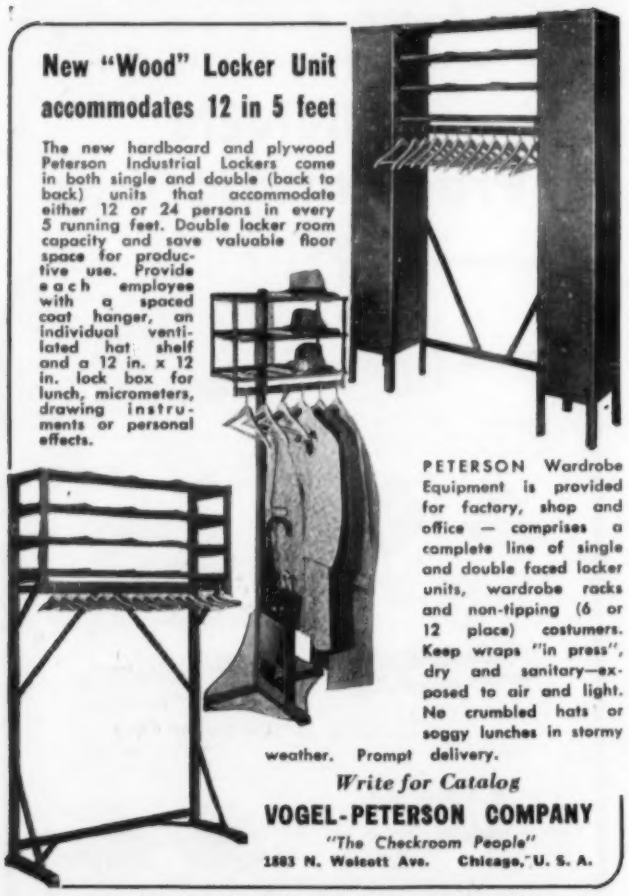
AMERICAN DISTRICT STEAM COMPANY . NORTH TONAWANDA, N. Y.

Making "UP-TO-DATE" Steam Line Equipment for over 60 years

▲ Mention Item NED-4334 when writing ▲

New "Wood" Locker Unit accommodates 12 in 5 feet

The new hardboard and plywood Peterson Industrial Lockers come in both single and double (back to back) units that accommodate either 12 or 24 persons in every 5 running feet. Double locker room capacity and save valuable floor space for productive use. Provide each employee with a spaced coat hanger, an individual ventilated hat shelf and a 12 in. x 12 in. lock box for lunch, micrometers, drawing instruments or personal effects.



PETERSON Wardrobe Equipment is provided for factory, shop and office — comprises a complete line of single and double faced locker units, wardrobe racks and non-tipping (6 or 12 place) costumers. Keep wraps "in press", dry and sanitary—exposed to air and light. No crumbled hats or soggy lunches in stormy weather. Prompt delivery.

Write for Catalog

VOGEL-PETERSON COMPANY

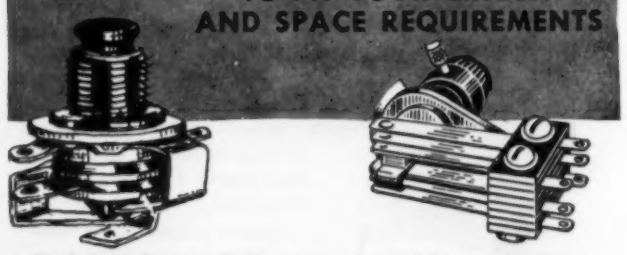
"The Checkroom People"

1883 N. Wolcott Ave. Chicago, U. S. A.

▲ Mention Item NED-4335 when writing ▲

utah SWITCHES

TO FIT YOUR CIRCUIT AND SPACE REQUIREMENTS



• Utah Switches are built to give dependable performance—and have proved themselves in hundreds of electrical operations.

Compact size, highest quality and economical price are combined in Utah "Imp" push-button switches. They have the finest nickel silver or phosphorous bronze springs with integral contacts. Springs are fully insulated from the mounting, bushing and shaft—have high grade phenolic insulation. They are available in three circuit arrangements: "Single-Make"—"Single-Break"—"Brake-Make."

Also available are Utah Carter Rotary and Push-Button Jack switches, in long and short types. Small and compact in size, they are made to take minimum panel size. Full insulation is provided for all electrical parts. Write today for full details.

Ask also about UTAH VITREOUS ENAMEL RESISTORS, UTAH JACKS, UTAH PHONE PLUGS, UTAH TRANSFORMERS and UTAH WIREWOUND CONTROLS.

UTAH RADIO PRODUCTS COMPANY
GENERAL OFFICES AND FACTORY
854 ORLEANS ST., CHICAGO, ILL.

▲ Mention Item NED-4336 when writing ▲

New Processes & Materials

CLEANING COMPOUND

Cleaning of floors, painted surfaces, walls and glass is facilitated by use of formula SC-49 cleaner. This compound is claimed to reduce amount of physical labor and time required to do specific cleaning job and to be non-abrasive to all surfaces. No rinsing is required. It will not leave any dust film. Cleaner is safe for use and will not irritate skin. Generous sample is available without cost. Made by **Sugar Beet Products Co.**, 315 Waller St., Saginaw, W. S. Mich.

▲ Mention Item NED-4337 when writing ▲

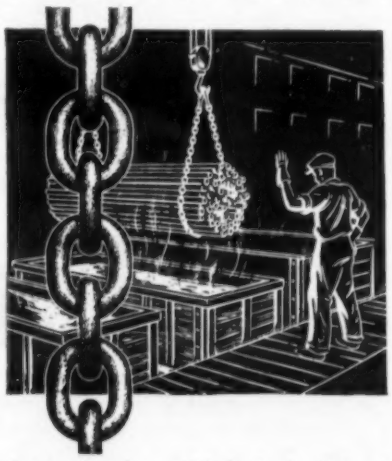
SYNTHETIC RUBBER HOSE

Especially suited for gravity and low pressure feeding of petroleum products, Hycar synthetic rubber hose is little affected by temperatures as low as minus 70 degrees Fahr. and does not crack or disintegrate under intense sunlight or heat. Hose can be made in one operation by extrusion method in lengths as long as desired. Costly process of wrapping and covering tube is not necessary. Oil resistant synthetic of which hose is made is also adaptable for use in flexible couplings on oil or other solvent carrying lines. Made by **Hycar Chemical Co.**, 335 South Main St., Akron, O.

▲ Mention Item NED-4338 when writing ▲

BRONZE CHAIN

Unaffected by acid to any noticeable degree, die cast bronze chain for use in acid pickling tank slings is now available for nationwide distribution in war plants. This chain possesses high degree of strength to avoid failure which might cause acid splash and severe burns to nearby workmen. For equal size links, cast bronze chain is somewhat stronger than steel chains, manufacturer claims.



Chain is built up by casting one link through other by series of ingeniously arranged molds. After certain number of links have been cast, these lengths are joined together by molded single link of similar dimensions.

Those making inquiries should state size of load going into their tanks both as to dimensions and maximum weight in order that proper size chain may be recommended and quotations given. Chain is made by **Bronze Die Casting Co.**, Franklin St., N. S. at Ohio River, Pittsburgh, Pa.

▲ Mention Item NED-4339 when writing ▲

Don't throw them away!

MAKE YOUR OLD BRUSHES LIKE NEW with Cabot's Brush Cleaner

• Just soak old caked-up brushes in this amazing new cleaner, then rinse in water. Cabot's Brush Cleaner smacks out hardened old paint right down to the heel—leaves bristles soft, flexible, lustrous. And, not only does it make old brushes like new *but it keeps new brushes in top condition.* Use it regularly. It's the only cleaner kind to bristle and setting.

SAMPLE. Send for 4 oz. sample today. Please enclose 10c to cover mailing, packing costs.

SAMUEL CABOT, Inc.
1419 OLIVER BUILDING BOSTON, MASS.

Cabot's BRUSH CLEANER

▲ Mention Item NED-4340 when writing ▲

PAPER

FOR PLASTIC AIRPLANE PARTS

ONE OF CENTRAL'S MANY WARTIME PAPERS

Have you explored the possibilities of "Industrial Papers" to meet your production problems — saving time, money and critical materials.

Central laboratory designed papers are now being used by many of the country's largest manufacturers.

Write for Free Book: Technical and Industrial Papers.

CUSTOM BUILT AND CENTRALINE SPECIALTY PAPERS

BUY U. S. WAR BONDS

CENTRAL PAPER COMPANY INC.

2412 LAKESHORE DRIVE
MUSKEGON 28, MICHIGAN

▲ Mention Item NED-4341 when writing ▲

Compressed AIR DRYER

RUEMELIN Compressed Air Dryers extract water and oil from compressed air by a simple, proven method. The aftercooler cools the air to the dew point. The expeller removes the moisture and oil in a free state. This equipment eliminates many operating troubles. Installed by many leading industrial plants.

MAXIMUM ECONOMY *costs nothing to operate. No moving parts to wear out. Sizes to 300 cu. ft.*

May we send you literature?

RUEMELIN MFG. COMPANY
3883 N. PALMER ST., MILWAUKEE 12, WISC.

RUEMELIN

▲ Mention Item NED-4342 when writing ▲

FOR SMALL PARTS

TOO DIFFICULT TO CLEAN

MANUALLY or by ANY OTHER METHOD.

Component parts of radio tubes are small, delicate, numerous, presenting a tough cleaning problem. Increasingly L & R is specified and is achieving gratifying results. With such a record, L & R is worthy of your inquiries. *WRITE for complete catalog data.* In one unit, L&R CLEANS • RINSES • POLISHES • DRIES instruments, meters, gauges—all types of small metal parts, quickly, easily.

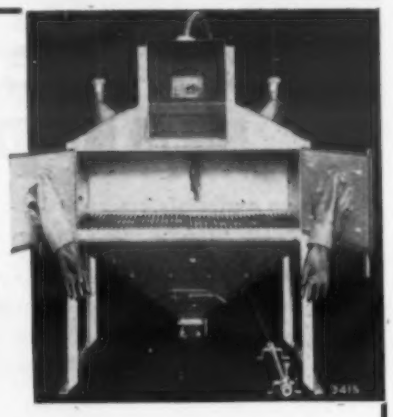
L & R PRECISION CLEANING EQUIPMENT

USED BY MORE THAN 200 INDUSTRIES

L & R MANUFACTURING COMPANY

54 CLINTON ST. DEPT. NEWARK 2, N. J.

▲ Mention Item NED-4343 when writing ▲



SLY

BLAST CABINET *Speeds* CLEANING

★ Cleans rapidly by *abrasive blasting*—tools, forgings, castings, heat treated parts, etc.

Ample illumination inside by two well-placed light fixtures. Excellent view of interior through vision screen—with outside glare excluded.

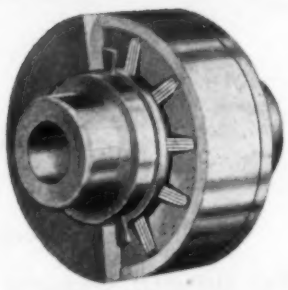
Cabinet of strong steel plate, welded construction on rigid angle frame.

Two standard sizes—also special designs—to meet all needs.

SLY THE W. W. SLY MFG. CO.
4748 TRAIN AVE., CLEVELAND, O.
INDUSTRIAL DUST CONTROL

▲ Mention Item NED-4344 when writing ▲

USE CUSHION TORQUE
—IT INCREASES OUTPUT



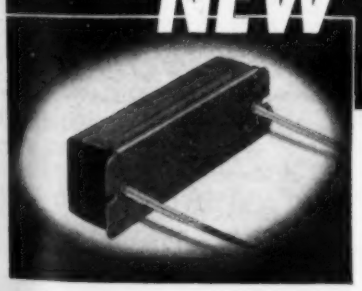
Kanti-Lever Coupling

If you want steady, uninterrupted production. . .lower machine-repair costs and freedom from bearing troubles, the Kanti-Lever is your answer, for it not only protects you against the evils of misalignment like the ordinary coupling, but it goes several steps further and protects your Motors and Productive Machines against the wear, vibration and fatigue that are the source of most machine failures. Over 3,000,000 horse power in operation. . . SEND FOR BULLETIN No. 28-D

BROWN ENGINEERING CO. 129 N. THIRD ST. READING, PA.

▲ Mention Item NED-4345 when writing ▲

NEW Ballasts with Leads out the Bottom



They save pounds of critical material per fluorescent fixture

Identical electrically with those of corresponding ratings in the conventional design; differ mechanically only in location of leads. Because leads come out through two bushed holes in base plate (one at each end), ballast can be mounted completely exposed atop a very narrow, shallow wiring channel. Thus, pounds of critical iron and steel, formerly required to house ballast and leads, can be saved.

Installation simplified. Because of exposed location, these ballasts operate in lower ambient temperature, do not require special installation features — ventilating louvers, conduction plates, etc. Lower operating temperature contributes to long ballast life.

Wide range of ratings. Available in 40-watt Tulamp and three-lamp ratings, 100-watt Tulamp and Forlamp ratings—those most often used in war plants.

For complete information, send for Bulletin GEA-3293E. *General Electric Company, Schenectady, New York.*

GENERAL ELECTRIC
408-16-5205

▲ Mention Item NED-4346 when writing ▲

New Processes & Materials

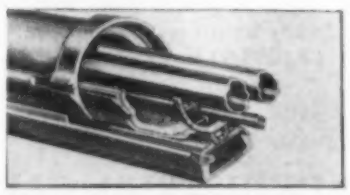
PROTECTIVE SHOP COAT

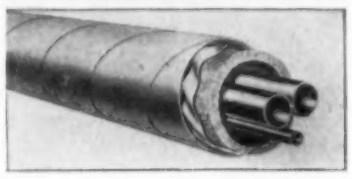
Produced to meet governmental requirements and specifications for protection of metal and metal parts, finished or unfinished, while in storage or in shipment overseas, Overseas Shop Coat can be applied by brush, spray or dip. Drying time is from 15 to 30 minutes and it can be removed easily with napthas when destination is reached.

Tentative Processing and Packaging Manual No. SP-1001 and Export Manual No. EM-100 for overseas shipment of the War Dept. specifies use of this coating for metal and metal parts. Made by **Carbozite Corp.**, 956 First National Bank Bldg., Pittsburgh 22, Pa.

▲ Mention Item NED-4347 when writing ▲

INSULATED PIPE CONDUIT





Process liquids can be piped relatively long distances with desired temperatures maintained through use of Ric-wiL insulated conduit, illustrated at bottom. Any specified combination of pipes can be furnished in prefabricated conduit, with insulation so arranged that pipes are insulated from exterior but not from each other.

Conduit is helically corrugated, coated and wrapped with asphalt saturated asbestos felt. Assembled units are furnished in 21-foot lengths for speedy installation. Prefabricated connecting bands, expansion devices and accessories required for complete system are included.

System is adaptable to underground or overhead installations and is equally efficient for hot and refrigerated process liquids of all kinds. Steam or hot water lines may be used to heat liquids in other pipelines. Tile system, shown at top, is based on same principle. It has diatomaceous earth lining molded and keyed to inside of tile. This tile system is adaptable only to underground installation. Made by **The Ric-wiL Co.**, 1572 Union Commerce Bldg., Cleveland, O.

▲ Mention Item NED-4348 when writing ▲

SYNTHETIC RUBBER

Capable of maintaining flexibility at minus 70 degrees Fahr., this compound made from Ameripol synthetic rubber can be bent at angle of 90 degrees around ½-inch rod. Compound is being used in construction of bolted tanks for storage of high octane gasoline and aromatic fuels used in military aircraft.

These tanks are made from sheet metal and sealing strips of synthetic rubber are placed at points where sheets are bolted together. Tightening of bolts squeezes synthetic rubber between adjoining plates and assures fuel-tight seal. This compound is resistant to attack by most solvents. Made by **The B. F. Goodrich Co.**, Dept. E, 500 S. Main St., Akron, O.

▲ Mention Item NED-4349 when writing ▲

FOR VACUUM PROCESSES— STEAM-JET EJECTORS

Steam-jet ejectors are a reliable and efficient means of removing air, gas or vapors from vacuum chambers in industrial processes. Ingersoll-Rand can furnish ejectors for practically any capacity and for absolute pressures as low as 50 microns Hg. Ask the Ingersoll-Rand engineer for details.

Twin-element, two-stage steam-jet vacuum pump with intercondenser.

Two-stage ejector mounted on a barometric-type aftercondenser.

4-288

Ingersoll-Rand
11 BROADWAY, NEW YORK CITY

▲ Mention Item NED-4350 when writing ▲

BARBER-COLMAN POWER UNIT

ON NORTH AMERICAN ADJUSTABLE PORT VALVE

These POWER UNITS are ideally suited for industrial applications. They feature built-in limit switches and a high torque motor with gear reduction, oil submerged, for long life and dependable operation. Control action may be governed by a recording or indicating controller or other contact making control instruments. POWER UNITS are available for "on-off", floating, and proportioning modes of control, including proportioning with manual or automatic resetting.

Write for Bulletin 4-1912 "POWER UNITS"

Controls by BARBER-COLMAN COMPANY — MAXIMUM SERVICE MINIMUM MAINTENANCE

BARBER-COLMAN COMPANY
1206 ROCK ST. • ROCKFORD • ILLINOIS

▲ Mention Item NED-4351 when writing ▲

. . . . 2c MORE FOR A NON-RUSTING BOLT IN A VITAL PART

CAN A COUPLE OF PENNIES more per bolt save thousands of dollars? Indeed they can . . . and Harper Fastenings are proving it every day. Saving huge sums by preventing hidden destruction by rust and corrosion. They help war production machinery to stand up under today's grueling speed and overtime.

Such tremendous trifles, these Harper non-ferrous and stainless fastenings. Trifling too, in their extra cost. Yet tremendous in their usefulness.

4320 STOCK ITEMS . . . of bolts, nuts, screws, washers, rivets and accessories in the non-ferrous and stainless alloys.

WRITE FOR CATALOG . . . and reference book—80 pages—4 colors—193 illustrations—numerous tables and other data. Free when requested on a company letterhead.

THE H. M. HARPER COMPANY
2628 Fletcher Street, Chicago

BRANCHES: 45 West Broadway, New York City; 1617 Pennsylvania Blvd., Philadelphia; 332 I. N. Van Nuys Bldg., Los Angeles.
Offices in Principal Cities

ARMY E NAVY
Awarded Dec. 7, 1942
Star added June 7, 1943

HARPER *Chicago*
EVERLASTING FASTENINGS

BRASS • BRONZE • COPPER • EVERDUR
MONEL • STAINLESS

▲ Mention Item NED-4352 when writing ▲

RELAYS by GUARDIAN

but efficient RELAY by GUARDIAN

★ This tiny relay weighs less than an ounce but it's a cocky and energetic little bantam . . . full of life and fight—in a small way, of course—but plenty sufficient for its job in aircraft and radio where small size and light weight are at a premium. And tough, too . . . tough enough to withstand 10 g's vibration.

Like to know more about it? A postcard will do—ask for Bulletin on the 195 series. No obligation.

GUARDIAN ELECTRIC
1626 WEST WALNUT STREET CHICAGO, ILLINOIS
LARGEST LINE OF RELAYS SERVING AMERICAN WAR INDUSTRY

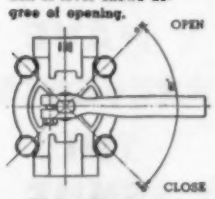
▲ Mention Item NED-4353 when writing ▲

Save AIR, TIME, EFFORT!

with NOPAK Quick-Opening SHUT-OFF VALVES

QUARTER-TURN LEVER CONTROL

A quarter-turn of the valve lever positively opens or closes the valve, permits quick or throttling action. Position of lever shows degree of opening.



A flick of the finger opens or closes the NOPAK Shut-Off Valve. There's no slow, laborious wheel-turning . . . no pressure lost while valve is manipulated. On lines connected to air powered tools, NOPAK Shut-Off Valves prevent air waste, conserve valuable man-hours for productive effort.

The patented NOPAK Rotating Disc principle makes them leak-proof and wearproof. Flat lapped-disc sealing surfaces improve with use, are always protected against grit abrasion. No tapered plugs to stick or wear . . . no packing to replace. May be used for Air, Gas, Oil or Water. Write for literature.

GALLAND-HENNING MFG. CO.
2755 S. 31st Street Milwaukee 7, Wis.
Representatives in Principal Cities

NOPAK VALVES and CYLINDERS
DESIGNED for AIR or HYDRAULIC SERVICE

▲ Mention Item NED-4354 when writing ▲

HOLTITE Fastenings are produced with the uniform precision of small tools to effect time-saving application and faultless performance in war weapon assemblies . . . . . .

BUY MORE BONDS

CONTINENTAL SCREW CO. NEW BEDFORD, MASS., U.S.A.

▲ Mention Item NED-4355 when writing ▲

New Processes & Materials

MASONRY WATERPROOFER

Masonry walls and floors can be made permanently waterproof by Stop-It quick setting sealing material. Sealer may be used directly on below ground surfaces which are seeping water. Cracks in walls and floors as well as joints may be patched readily.

Material can be used for building up broken and crumbled areas in concrete walls, piers and for filling in around pipes and bolts. This powder is supplied ready for use with addition of water. Made by **Tamms Silica Co.**, 228-30 N. LaSalle St., Chicago, Ill.

▲ Mention Item NED-4356 when writing ▲

INDUSTRIAL CLEANER

Any material which is not harmed by water can be safely cleaned with this liquid soapless cleaner which is said to remove dirt and grime harmlessly from polished floors or finest fabrics. Containing no corrosives such as caustics, acids, abrasives, free alkali or animal fat, cleaner is not affected by government restrictions on fats and oils.

It may be diluted with as high as 128 parts of water and it is instantly soluble in cold, hot, hard, soft, fresh or salt water. It is claimed not to leave any slippery surface or objectionable odor and will not turn rancid in storage. Freezing does not affect its cleaning qualities. Cleaner may be used on walls, enamel, porcelain, stainless steel, aluminum, rugs, upholstery, glassware and similar materials. Made by **Technical Development Laboratories**, Dept. 30, Tenafly, N. J.

▲ Mention Item NED-4357 when writing ▲

TOOL PACKAGING

Protection of cutting edges of Clark adjustable hole cutting and facing tools is provided by this packaging method. One drilled wood block serves as base for cutting edges of tool and other block is drilled to fit the shank. Tool is held in cardboard container during shipping and this box may also be used as tool crib stand for protection during storage of tool. Cutting tools made by **Robert H. Clark Co.**, 3414 Sunset Blvd., Los Angeles, Calif.

▲ Mention Item NED-4358 when writing ▲

BLOWS CUSHIONED with Rawhide HAMMERS and MALLETS

Coiled Rawhide faces strike effective blows without marring or battering; speed up work; reduce spoilage. Hold true faces—strike accurately. Outlast several ordinary mallets. Reduce bounce and recoil—prevent fatigue. All sizes with light or weighted heads. Write for Catalog.

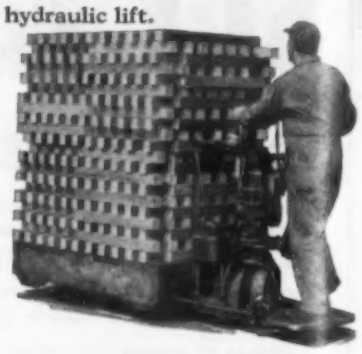
Replacement insert faces for C/R Hammers sold by leading supply houses.

CHICAGO Rawhide MFG. CO.
1287 ELSTON AVE. ★ CHICAGO, ILLINOIS.

▲ Mention Item NED-4359 when writing ▲

S-t-r-e-t-c-h MAN POWER

Handle materials easier and in less time by the use of the Truck-Man . . . it will stretch out that man power for you . . . simple to operate . . . handles skidded loads of one ton or lighter . . . turns in its own length . . . gasoline powered . . . hydraulic lift.



Rigid, sturdy construction. Use with any standard 9½" or 10" skid that is 30" between legs. Wheelbase 54". Lift of platform 3¾". Truck-Man Bulletin gives all details.

Send for it today.

Priced at but $600.00 F.O.B. Jackson, Michigan

truck-man a product of YARD-MAN, INC. 1414 WEST GANSON JACKSON · MICHIGAN

▲ Mention Item NED-4360 when writing ▲

but we used Hodgman Saran and delivered on time!

When the history of this period is written, this is what many firms will be able to say. HODGMAN SARAN is more than a substitute — it is a permanent replacement for strategic materials such as copper, brass, steel, aluminum, rubber, etc., and deserves a thorough investigation by your engineering department . . . Write today for technical data sheet and free sample.

*SARAN PLASTIC PIPE, TUBING, FITTINGS are chemically resistant and non-corrosive — withstand a wide range of temperatures — are easily installed with ordinary simple tools.

*Pat. No. 2160931

HODGMAN RUBBER CO.
FRAMINGHAM, MASS.

NEW YORK . . . 261 Fifth Avenue
CHICAGO . . . 412 South Wells St.
SAN FRANCISCO . . . 121 Second St.

▲ Mention Item NED-4361 when writing ▲

Three standard height ranges —18" to 22", 22" to 28", and 28" to 36". Other heights obtainable. Shaped plywood seat, adjustable back-rest and foot-rest.

Now! THEY'RE MADE OF WOOD

INCREASED PRODUCTION —PROMPT DELIVERY

● Kewaunee Automatic Adjustable Stools and Chairs, formerly made of metal, are now being produced in ALL WOOD. Redesigned to retain substantially the same adjusting principle. Sturdily built of selected hard wood to embody unusual strength and endurance. They're "ton-tested."

Kewaunee AUTOMATIC ADJUSTABLE CHAIRS and STOOLS

A new standard of efficiency in industrial seating. Any man or woman, tall or short, light or heavy, can *instantly* adjust a Kewaunee AA Chair or Stool to exactly the height desired. Just lift the seat—that's all. Right posture, correct height of seat from floor, insure greater comfort and efficiency, better work, increased production, fewer rejects.

Write for circular and full details.

KEWAUNEE MFG. CO., ADRIAN, MICH.

▲ Mention Item NED-4362 when writing ▲

. . . JUST TRY 1

MOCCASIN BUSHING on your most TROUBLESOME BEARING

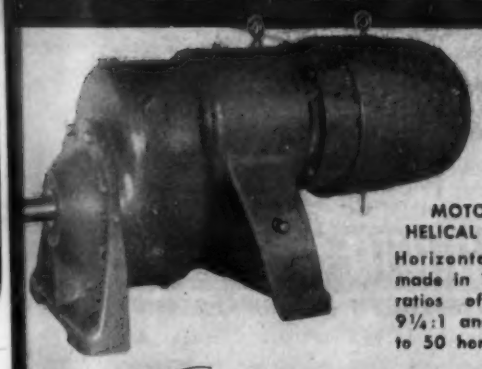
The success of Moccasin Bushings' efficiency lies in their unique lubrication principle. Oil is drawn from a reservoir in the bearing housing and is distributed by capillary action in a continuous, unbroken film over the entire bearing surface. Drippage and seepage of oil is entirely eliminated, and under ordinary circumstances they require attention only two to four times a year—just try one on your most troublesome bearing. Guaranteed for satisfactory service.

Moccasin BUSHING COMPANY
CHATTANOOGA, TENNESSEE

▲ Mention Item NED-4363 when writing ▲

MOTORIZED PLANETARY REDUCER
Horizontal drive, made in 35 sizes in ratios of 10 to 1200:1 and from ¾ to 75 horsepower.

D.O.JAMES MOTORIZED SPEED REDUCERS



MOTORIZED HELICAL REDUCER
Horizontal drive—made in 13 sizes in ratios of 1¼ to 9¼:1 and from ¾ to 50 horsepower.

ARMY E NAVY

MOTORIZED WORM GEAR REDUCER
Horizontal drive—made in 11 sizes in ratios of 6 to 80:1 and from ⅛ to 50 horsepower.

SAVE ESSENTIAL AND VALUABLE SPACE

War time requirements make the D.O.James Motorized Reducers a very important Must in solving and meeting the power-saving needs of modern industry. Their accessibility and compactness make them most desirable when floor space is limited. Their soundness of design and manufacture insures maximum efficiency with minimum maintenance.

D.O.JAMES MANUFACTURING CO.
Established 1888
1140 W. Monroe Street Chicago, U. S. A

▲ Mention Item NED-4364 when writing ▲

NEW Literature AND Catalogs

GAS PUMPS—6-page illustrated bulletin No. 31-B-15 describes Victor-Acme positive displacement gas pumps and shows various types of driving arrangements which make them adaptable for wide range of industrial applications—issued by Roots-Connersville Blower Corp., 903 Western Ave., Connersville, Ind.

▲ Mention Item NED-4365 when writing ▲

METAL FORMING MACHINES—12-page illustrated bulletin is descriptive of line of metal forming machinery—included are rotary gang slitters, side trimmers, roll forming equipment, tube mills, cut off equipment, recoilers and uncoilers—issued by The Yoder Co., 5501 Walworth Rd., Cleveland, O.

▲ Mention Item NED-4366 when writing ▲

MAGNESIUM—18-page illustrated booklet, "Fisher Magnesium Scrapbook", is concerned with production of magnesium alloys—information is presented under headings: furnaces, fuels, melting, fluxing, inhibitors, fire prevention and crucible pots—issued by Fisher Furnace Co., 5535 N. Wolcott Ave., Chicago, Ill.

▲ Mention Item NED-4367 when writing ▲

INFRA-RED PROCESS—12-page illustrated booklet, Flashes No. 443, is descriptive of near infrared process used for baking, drying, dehydrating, preheating and similar operations—diagrams show lamp arrangements for these operations—issued by The Fostoria Pressed Steel Corp., 1240 Harris Rd., Fostoria, O.

▲ Mention Item NED-4368 when writing ▲

WELDING TORCH CARE—20-page illustrated booklet, "Handbook for the Welding and Cutting Operator", contains list of do's and don'ts on care and maintenance of blowpipes, regulators and welding and cutting accessories—issued by International Acetylene Association, 30 E. Forty-second St., New York City.

▲ Mention Item NED-4369 when writing ▲

BRONZE BEARINGS—8-page illustrated bulletin describes Compo oil retaining porous bronze bearings—hundreds of sizes of sleeve type, flanged bearings and thrust washers are carried in stock for immediate shipment—issued by Bound Brook Oil-Less Bearing Co., Bound Brook, N. J.

▲ Mention Item NED-4370 when writing ▲

FLUORESCENT FIXTURES—8-page illustrated catalog No. 400 introduces Mitchelite line of fluorescent fixtures for war industry—shows how various models can be used for individual or continuous row lighting for surface or suspension mounting—issued by Mitchell Mfg. Co., Dept. N-2, 2525 N. Clybourn Ave., Chicago, Ill.

▲ Mention Item NED-4371 when writing ▲

PUNCHING UNITS—8-page illustrated bulletin No. G is concerned with punching and notching equipment—facilities of plant for producing this equipment are described—issued by Wales-Strippit Corp., North Tonawanda, N. Y.

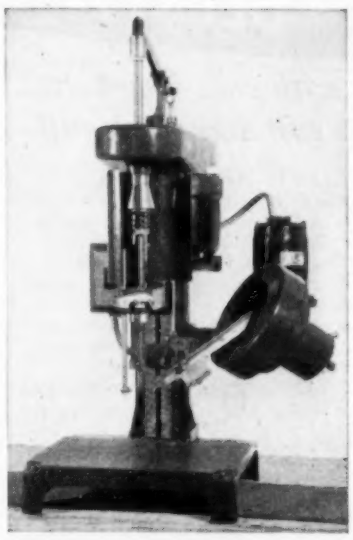
▲ Mention Item NED-4372 when writing ▲

TOUGH SCREWDRIVING JOBS MADE EASY WITH DETROIT POWER SCREWDRIVERS

High Production Machines That Really Do a Job

Three Models for Handling Screws from No. 2 x ⅛ to ⅝ Cap Screws

Hand Screw Driving Has No Place in These Days of High Production.



Use These Modern Machines

Send Samples for Production Estimates

DETROIT POWER SCREWDRIVER CO.
2819 W. Fort St. Detroit, Mich.

▲ Mention Item NED-4373 when writing ▲

DOALL MACHINES Do a Good Job at CONSOLIDATED VULTEE

Cutting sheet aluminum at the Fort Worth home of B-24 Liberator Bombers and C-87 Liberator Express Transports. This is only one of many DoAlls in this modern plant.

MACHINES OF MANY USES

That's what Consolidated Vultee calls the DoAll, and it's a fact because

- DoAll does internal and external cutting of metals, alloys, plastics, etc. following a hairline design with unerring precision.
- Cuts out production parts, jigs, dies, fixtures, cams, templates, special tools, etc.
- Cuts 100 or more shapes at one time from stacked sheets.
- Makes short runs of stampings or forgings.
- Cuts out blocks, sheets, bars or tubing.
- Relieves heavy machine tools for other work.

DoAll is on the job on regular production lines, in experimental rooms, tool rooms and repair departments. DoAll smashes bottlenecks—beats former time records—gets jobs through on time.

Investigate this modern machine that does hundreds of shaper, milling and lathe jobs in a fraction of the time.

"DOALL ON PRODUCTION"—Interesting book, well illustrated, about DoAll performance in many plants. Write for copy today.

CONTINENTAL MACHINES, INC.
1314 S. Washington Ave., Minneapolis, Minn.

DoAll Offices in 25 cities, each in charge of a trained sales engineer to give you quick service on Contour Machines, Band Saws and Files, Gage Blocks and Surface Grinders.

▲ Mention Item NED-4374 when writing ▲

JOHNSON UNIVERSAL BRONZE

TIME SAVER

Completely Machined

You eliminate all guesswork . . . all danger of hidden imperfections when you use Johnson UNIVERSAL Bronze Bars. Complete machining—I. D.—O. D. and Ends also saves you 25% in purchase weight. Your local distributor has a stock.

JOHNSON SLEEVE BEARING BRONZE HEADQUARTERS
580 S. MILL STREET NEW CASTLE, PA.

▲ Mention Item NED-4375 when writing ▲

For Little INSIDE JOBS

BAY STATE
ABRASIVE PRODUCTS CO., INC., WESTBORO, MASS. U.S.A.

▲ Mention Item NED-4376 when writing ▲

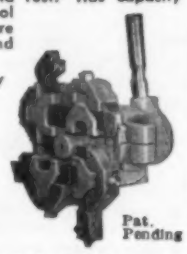
DON'T WAIT FOR TURRET LATHES

Convert any engine lathe into a turret lathe in 15 seconds with JEFFERSON TURRET ATTACHMENTS. To fit bench lathes and lathes up to 24" swing

● This new modern TOOL-POST TURRET (below, right), made in 2 sizes, designed to increase production on engine lathes. Easily mounted on cross slide or compound rest. Has capacity of 4 standard tool holders which are easily inserted and rigidly held.

6 Days Delivery

● Then there's the completely modernized 5-tool TAIL-STOCK TURRET (below, right), made in 4 sizes to fit small bench lathes and lathes up to 24" swing. Also the adjustable PULL-FEED LEVER. Jefferson Turrets are real production tools — substantial, rigid, accurate. They must not be confused with the small make-shift gadgets now on the market.

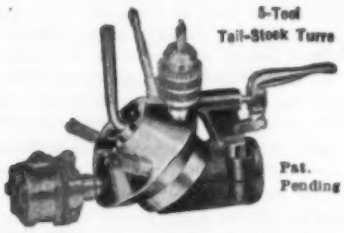


Pat. Pending

4-Tool Tool-Post Turret

The Jefferson Bull-Dog Precision Milling Machine. Obtainable Power or Hand Feed.

5-Tool Tail-Stock Turret



Pat. Pending

● ALSO—Milling Machine Dividing Heads, Vises, Belt Sanders, Swing Frame Grinders, Gyratory Foundry Riddles.

JEFFERSON MACHINE TOOL CO.
669-679 W 4th STREET DEPT. J CINCINNATI, OHIO

▲ Mention Item NED-4377 when writing ▲

MAINTENANCE
helps keep them in service

Wartime demands make it more important than ever that test equipment be kept constantly in service. Routine cleaning, lubrication, and adjustment will help keep your General Radio instruments in top condition. This work, as well as minor repairs, can be done in your own plant with the help of our Service and Maintenance Notes which are available for practically all of our instruments, including stroboscopes, sound-level meters, and Variacs, as well as radio instruments. To get your copy, send us the type numbers and serial numbers of your GR instruments.

GENERAL RADIO COMPANY
Cambridge, Massachusetts
NEW YORK LOS ANGELES

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Free 72-PAGE BOOK OF VENTILATING INFORMATION

for Executives and Engineers

Invaluable in solving problems involving excess—

Heat
Moisture
Dust
Fumes

MAIL THIS COUPON!

PROPELLAIR, INC., Springfield, Ohio 10K

Please send the 72-page Propellair book of ventilating information.

Name..... *Position*.....

Firm Name.....

Address..... *City & State*.....

My ventilating problem involves:

☐ Heat ☐ Fumes ☐ Moisture ☐ Dust

▲ Mention Item NED-4379 when writing ▲

New Literature—Continued

ELECTRICAL INSULATION—4-page illustrated bulletin No. 143 describes ten types of Thermobonds which are produced to provide insulation for such units as high speed armatures, high cycle drill and grinder motors and transformers—issued by The Sterling Varnish Co., 163 Ohio River Blvd., Haysville, Pa.

▲ Mention Item NED-4380 when writing ▲

TUBE SPINNING—28-page illustrated catalog No. E-1 explains process of tube spinning—photographs show various types of shapes that have been made—issued by Wolverine Tube Div., Calumet & Hecla Consolidated Copper Co., 1411 Central Ave., Detroit, Mich.

▲ Mention Item NED-4381 when writing ▲

CUTTING MACHINE—illustrated broadside, "No Bushings Or Guides Needed", is descriptive of bench Keyseater broach type cutter—method of operation is outlined—issued by Reading Machine Co., 500 Main St., Reading, (Cincinnati) O.

▲ Mention Item NED-4382 when writing ▲

PIPE FITTINGS—12-page illustrated booklet, "Pipe Templates for Welded Fittings", tells how to fabricate fittings for welded-piping installations by means of flame cutting and welding—issued by Air Reduction, 60 E. Forty-second St., New York City.

▲ Mention Item NED-4383 when writing ▲

ELECTRIC BRAKE—6-page illustrated bulletin explains construction and operation of Magdraulic electric brake—engineering drawings give dimensions of three stock sizes, as well as appropriate torque which each of these brakes deliver—issued by Empire Electric Brake Co., Newark, N. J.

▲ Mention Item NED-4384 when writing ▲

COKE OVEN PLANTS—12-page illustrated leaflet is entitled "Coke Oven Plant Construction and Development in 1942"—summary lists improvements in design, cites certain new processes and gives construction figures for 1942—issued by Koppers Co., Engineering & Construction Div., 1146 Koppers Bldg., Pittsburgh, Pa.

▲ Mention Item NED-4385 when writing ▲

CONVECTION HEATED OVENS—18-page illustrated booklet, "Blueprint for Industry" Part II, summarizes typical designs and installations of convection heated ovens for batch and continuous heating processes—issued by The Industrial Oven Engineering Co., Granada Bldg., Cleveland, O.

▲ Mention Item NED-4386 when writing ▲

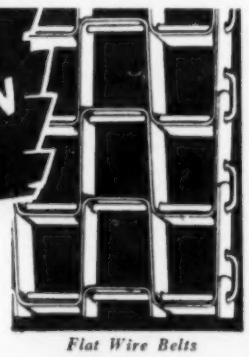
CEMENTED CARBIDE DIES—32-page illustrated catalog covers standard and special cemented carbide dies for drawing wire, bar, tubing and sheet metal—die room accessories, supplies and equipment are also listed—issued by Carboloy Co., 11163 E. Eight Mile Rd., Detroit 32, Mich.

▲ Mention Item NED-4387 when writing ▲

SURFACE CONDENSERS—36-page illustrated booklet is descriptive of surface condensers—among subjects discussed are structural and design features, steam penetration, marine condensers and pumping equipment—issued by Ingersoll-Rand Co., 11 Broadway, New York City.

▲ Mention Item NED-4388 when writing ▲

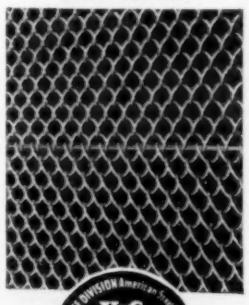
PREVENT PRODUCTION DELAYS...



... with conveyor belts that can stand the gaff

Flat Wire Belts

Chain Link Belts



CYCLONE Metal Conveyor Belts have the strength to withstand heavy loads—quick stops and starts. Water, steam, and temperature changes do not harm them. Thoroughly sanitary, heat-resistant, porous. These are good reasons why Cyclone Belts—long used to convey all types of products—are proving so practical for use in food dehydration.

U·S·S Cyclone Belts are available in Flat Wire and Chain Link types—in a variety of weights, widths and sizes of mesh. Write us for further information and prices.

CYCLONE FENCE DIVISION
(American Steel & Wire Company)
Waukegan, Ill. · *Branches in principal cities*
United States Steel Export Co., New York

CYCLONE *Metal Conveyor Belts* UNITED STATES STEEL

▲ Mention Item NED-4389 when writing ▲

ARMOR-VIT

IT IS NOT A PAINT ... NOT A VARNISH ... NOT A LACQUER ... NOT PORCELAIN ENAMEL

—it's a new and revolutionary **METAL FINISH**

Here is a priority-free finish that is highly resistant to rust, corrosion, heat, impact, abrasion, scratch, acids and alkalis. It is applied by spraying, then cured through a heat cycle of from 250° to 700° F. It is non-volatile, non-explosive. It is unaffected by heat of over 1000° F. and possesses amazing resistance to thermal shock. The standard 200-hour salt spray tests don't touch it.

There are accredited ARMOR-VIT applicators convenient to your plant. These are experienced firms who can accept your product, ARMOR-VIT it, then return it to you in jig time. ARMOR-VIT is available in black, gray or olive drab. Write today.

ARMOR-VIT DIVISION
CHICAGO VITREOUS ENAMEL PRODUCT CO.
Cicero · Illinois

▲ Mention Item NED-4390 when writing ▲

DI-ACRO Brake forms non-stock angles, channels or "Vees". Right or left hand operation. Folding width—Brake No. 1—6". Brake No. 2—12". Brake No. 3—18".

She's Fighting TOO!
Making Parts Without Dies

No delay waiting for dies — parts ready quicker — deliveries speeded up — all to bring the Victory sooner! Women are rapidly taking a major place on the industrial front. DI-ACRO Precision Machines — Shears, Brakes, Benders — are ideally suited for use by women in making duplicated parts accurate to .001" — DIE-LESS DUPLICATING. Thousands of DI-ACRO Machines are now in use in War plants. Get the whole story — write for catalog—"Metal Duplicating Without Dies."

O'NEIL-IRWIN DI-ACRO PRECISION MACHINES MFG. CO.
354 EIGHTH AVE. SOUTH · MINNEAPOLIS 15, MINN.

▲ Mention Item NED-4391 when writing ▲

GREATER EFFICIENCY *Round-the-Clock*

Today, when tools must be operated Round-the-Clock, the simple design and dependability of ARO Pneumatic Tools are proving their outstanding superiority on small tool operations such as drilling, grinding, screwdriving, nut-setting and many special applications. Investigate ARO. Write for catalog. Ask ARO Field Engineers to help solve your *special* tool problems.

THE ARO EQUIP. CORP. ARO BRYAN, OHIO

PNEUMATIC TOOLS

▲ Mention Item NED-4392 when writing ▲

RMSTRONG

DROP FORGED "C" CLAMPS

Because they never give, these ARMSTRONG Heavy Duty "C" Clamps are safely used, day after day, to carry these gigantic steel forming dies where the slightest spread or spring or the least slippage of the screw would result in disaster

Here is dependable quality that you too can rely on. Look for the Arm-and-Hammer Trade Mark. It guarantees a better clamp.

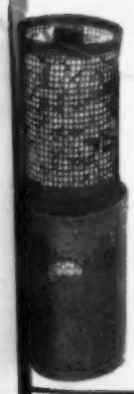
Write for Catalog C-39.

ARMSTRONG BROS. TOOL CO.
"The Tool Holder People"
307 N. FRANCISCO AVE. CHICAGO, U. S. A.
Eastern Warehouse and Sales: 199 Lafayette St., New York

▲ Mention Item NED-4393 when writing ▲

ELIMINATE
Dampness, Mold, Mildew with
WATER SORBER

ATER SORBER is the answer of experienced air-conditioning gineers to industry's problem of excess air moisture. This ficient, compact appliance uses cubes that are harmless, non-aining, easy to handle and inexpensive. One filling (10 lbs.) this chemical absorbs—literally "soaks up"—from 10 to 15 s. of moisture from damp air.



WATER SORBER eliminates condensation, mold and mildew which causes damage to tools and other instruments, and to contents of feed storehouses, freight cars, ships, telephone exchanges, etc. Also protects valuable office and shop records.

WATER SORBER has no moving parts. Two convenient sizes. Additional cubes for refilling available at reasonable cost.

Write today for Descriptive Folder N.

THE GENERAL AIR CONDITIONING CORP.
4415 Appleton St.
CINCINNATI, OHIO

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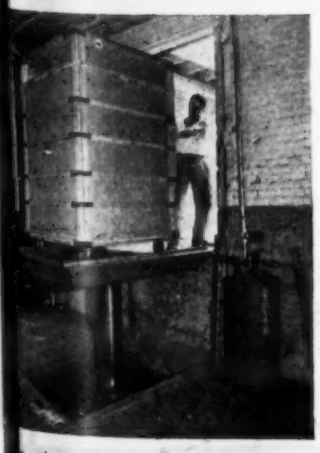
EVOLVATOR
YDRAULIC ELEVATORS



SAFE
SIMPLE
SURE

This Ramp Eliminator type saves time and trouble in moving material between basement and street levels. Similar short lift REVOLVATOR HYDRAULIC ELEVATORS are being used to feed paper and metal sheets to presses.

and most economical type of elevator for most short lifts. to fit your requirements they assure you satisfactory and dable service. Specify REVOLVATOR HYDRAULIC ATORS when building; modernizing; replacing.
for new Bulletin NED with dimension diagram.
vestigate also our famous REVOLVATOR PORTABLE ELEVATORS RED GIANT LIFTRUCKS.

EVOLVATOR Co.
ERS AND MANUFACTURERS OF MATERIAL HANDLING EQUIPMENT
th St. NORTH BERGEN, N. J. Since 1904

▲ Mention Item NED-4395 when writing ▲

New Literature—Continued

WATER CONDITIONING—10-page technical paper No. 86 by Dr. Lewis B. Miller reviews progress made during 1942 in industrial water conditioning—included is listing of all important technical papers published in 1942 on subject—issued by W. H. & L. D. Betz, Gillingham & Worth Sts., Philadelphia 24, Pa.

▲ Mention Item NED-4396 when writing ▲

METAL WORKING EQUIPMENT—28-page illustrated booklet covers line of metal working equipment—among items included are foot squaring shear, slip roll forming machine, adjustable bar folder, beading machine and grooving machine—issued by The Barth Mfg. Co., 102 Summer St., Plantsville, Conn.

▲ Mention Item NED-4397 when writing ▲

INDUSTRIAL DERMATITIS—16-page booklet by Louis Schwartz, Medical Director of U. S. Public Health Service on symptoms, causes and prevention of industrial dermatitis is reprint of article appearing in recent publication—issued by Standard Safety Equipment Co., Dept. N, 232 W. Ontario St., Chicago, Ill.

▲ Mention Item NED-4398 when writing ▲

TEMPERATURE INSTRUMENTS—35-page illustrated catalog N-33-163 describes Micromax temperature recorders for use with the thermocouples or with thermohm resistance thermometer bulbs—various applications are covered in detail—issued by Leeds & Northrup Co., 4934 Stenton Ave., Philadelphia, Pa.

▲ Mention Item NED-4399 when writing ▲

JACK MAINTENANCE—16-page illustrated manual, "Maintenance and Safety Hints", describes basic types of jacks and their proper use for best and safest results—special section is devoted to problems of individual fields—issued by Duff-Norton Mfg. Co., 2709 Preble Ave., N. S., Pittsburgh, Pa.

▲ Mention Item NED-4400 when writing ▲

RADIANT HEAT LAMPS—12-page illustrated bulletin No. A-3817 discusses design and performance of radiant heat drying lamps for drying, baking and heating processes—issued by Lamp Div., Westinghouse Electric & Mfg. Co., Bloomfield, N. J.

▲ Mention Item NED-4401 when writing ▲

SHEAVES—12-page illustrated booklet is descriptive of Pyott sheaves for multiple v-belt drives—sheaves can be applied or removed from either driver or driven shafts with socket wrench—issued by Pyott Foundry & Machine Co., 328 N. Sangamon St., Chicago, Ill.

▲ Mention Item NED-4402 when writing ▲

HYDRAULIC CYLINDERS—32-page illustrated catalog covers line of hydraulic cylinders—includes mounting arrangements, schematic drawings, velocity and piston alignment chart and chart of capacities—issued by Hanna Engineering Works, 1766 Elston Ave., Chicago, Ill.

▲ Mention Item NED-4403 when writing ▲

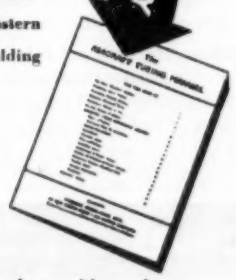
OFFICE & MAIL BAGS—4-page illustrated folder is descriptive of office mail bags, mail distribution bags, mail sacks and armored car bags—issued by William W. Stanley Co., 401 Broadway, New York 13, N. Y.

▲ Mention Item NED-4404 when writing ▲

New Aircraft Tubing Manual

A complete thirty page handbook describing practical shop-proven methods for handling, storing, protecting and installing metal and flexible tubing. Including sections on insuring the precise torquing of all types of fittings and bolts . . . how to ship hydraulic units . . . photographs of work in progress . . . detail charts . . . sectional figures analysing proper tubing procedure and other valuable reference material. Available at no charge or obligation when requested on your firm letterhead. Address: TUBING SEAL-CAP, INC.—215 WEST 7TH STREET—LOS ANGELES, CALIFORNIA. Eastern Representative—428 New Center Building—Detroit, Michigan.

SEND FOR THIS TODAY



▲ Mention Item NED-4405 when writing ▲

TORNADO
—protects your motors from

Next to dust—nothing is more damaging to motors than *moist air!* Not only does the TORNADO Portable Electric Blower eliminate the moist-air hazard, by blowing clean, *dry air*, but also does a more thorough cleaning job due to unusual power.

Keep your motors and machinery running longer, at higher operating efficiency—with fewer replacements and repairs—with the TORNADO. It blows out dust—eliminates moisture. *Investigate this dependable, low-cost method.*

Write for details and FREE TRIAL OFFER!

BREUER ELECTRIC MFG. CO.
5105 NORTH RAVENSWOOD AVE. CHICAGO, ILL.

▲ Mention Item NED-4406 when writing ▲

*Castolin Eutectic**

LOW TEMPERATURE WELDING

SIMPLIFIED DESIGN
FASTER PRODUCTION

MADE POSSIBLE WITH
CASTOLIN EUTECTIC ALLOY No. 16
Patented.

PROBLEM	SOLUTION
Fabrication of this intricate steel aircraft tubular assembly with high temperature fusion welding was impractical because the high heat resulted in distortion and softening of the metal. Additional time required for machining the joints rendered the process too costly.	Castolin Eutectic Alloy No. 16 eliminated the distortion and softening of the metal. How? This Low Temperature alloy binds at 1300° F. • Gives tensile strength of 117,000 lbs. per sq. in. • Three times faster than fusion welding • One third the cost of silver solder — three times the strength • Clean thin fillets eliminate after-machining.

Castolin Eutectic Alloy No. 16 for use on all steels: chrome-moly, chrome nickel, high speed vanadium steel, iron and malleable iron. Also for joining these to other metals and for tool salvaging.

Only "Eutectic" Alloys' are the true Low Temperature Welding Alloys that are revolutionizing production welding, maintenance welding and salvaging in war plants throughout the nation. There are 42 specialized rods for every metal and every welding job. Developed and manufactured only by Eutectic Welding Alloys Company.

* Reg. U. S. Pat. Off.

New 36 page Welding Data Book N Write Today

EUTECTIC
WELDING ALLOYS COMPANY
SOLE MANUFACTURER - CASTOLIN EUTECTIC WELDING ALLOYS
40 WORTH STREET, NEW YORK, N.Y.

▲ Mention Item NED-4407 when writing ▲

since they changed assemblies over to

AMERICAN PHILLIPS SCREWS

It amounts to rejecting rejection-tags, when you change from slotted screws to American Phillips. For the Phillips Recessed Head automatically aligns with the Phillips bit, forming one straight driving unit which always delivers these 3 operating advantages:

Quick Starting: No fumbling or wobbling, no dropping of screws. One hand holds the Phillips driver, other hand holds job.

Straight Driving: American Phillips Screw stays straight on the driver. Power drivers can be safely used.

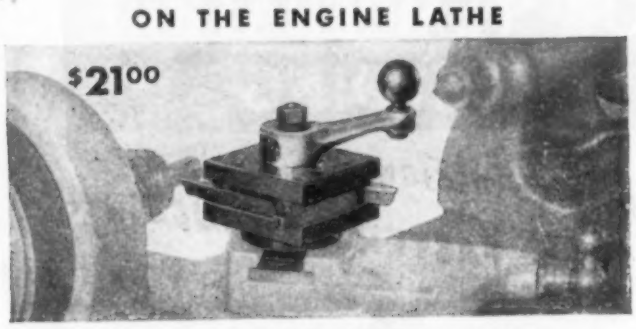
Each Fastening OK: No screw-heads burred or off plumb. No gouged work-surfaces or slashed hands. Screw sets up tighter, looks neater, holds better. Both men and women do better work and more of it with American Phillips Screws.

4-winged driver *can't slip out* of Phillips Tapered Recess

AMERICAN SCREW CO.
PROVIDENCE, RHODE ISLAND
Chicago: 589 E. Illinois Street
Detroit: 5-267 Gen. Motors Bldg.

▲ Mention Item NED-4408 when writing ▲

SPEEDS REPEAT OPERATIONS
ON THE ENGINE LATHE



***Mastercraft* 4-way Turret Tool Post**

A turning, threading, recessing, and cut-off tool (or any other combination) may be used in one set-up with no time lost in changing tools or stopping the machine.

Any number of tool block set-ups may be used in rotation on the same post with continued accuracy because Mastercraft Turret parts are completely interchangeable.

One model only fits South Bend, Sheldon, Clausing, Atlas Logan, and similar bench and floor lathes and small screw machines. $21.00. Immediate delivery. W. P. B. priority requirements.

F & M SALES COMPANY
MANUFACTURERS
1054 CAHUENGA BOULEVARD • HOLLYWOOD 38, CALIF.

▲ Mention Item NED-4409 when writing ▲

To Controlled Processing—feeding, cooling, conveying, drying, weigh-feeding, packing and screening. 176 pages of useful data to help you speed production. Profusely illustrated, showing basic design and operating principles of Jeffrey-Traylor equipment (patented) as well as technical information concerning its most common applications. Send for your copy.

The Jeffrey Manufacturing Co.
(Established in 1877)
952-99 North Fourth St., Columbus 16, Ohio

Please send me a copy of Catalog No. 750-S
Name .....
Position .....
Company .....
Address .....

▲ Mention Item NED-4410 when writing ▲

New Literature—Continued

MANGANESE STEEL—48-page illustrated bulletin No. 543-G outlines characteristics of manganese steel and points out its importance in keeping industry in uninterruptetd operation—typical uses are illustrated—issued by American Manganese Steel Div., American Brake Shoe Co., 389 E. Fourteenth St., Chicago Hts., Ill.

▲ Mention Item NED-4411 when writing ▲

WOOD—32-page illustrated booklet, "Wood And Its Place In The War Effort" outlines some applications of wood and its converted forms to production problems for war materials now and later for peacetime products—issued by Kay Displays, Inc., 9 E. Fortieth St., New York City.

▲ Mention Item NED-4412 when writing ▲

BRAZING ALLOY—12-page illustrated booklet No. B-3201 tells how to braze copper, brass or bronze joints with Phos-Copper—alloy can be used with gas, incandescent carbon, electric furnace and dip brazing methods—issued by Westinghouse Electric & Mfg. Co., Dept. 7-N-20, East Pittsburgh, Pa.

▲ Mention Item NED-4413 when writing ▲

FINE PITCH HOBS—15-page illustrated booklet is entitled "Facts About Small Fine Pitch Hobs"—specifications and operational data are listed—includes complete table of fine pitch gear tooth parts as A.G.M.A. recommended practice—issued by Barber-Colman Co., 230 Loomis St., Rockford, Ill.

▲ Mention Item NED-4414 when writing ▲

INDUSTRIAL DERMATOSIS—illustrated brochure, "Production Safeguards Against Dermatitis", outlines common causes of skin infections and lists products designed to protect worker against various types of industrial dermatosis—issued by West Disinfecting Co., Dept. DE, 42-16 West St., Long Island City, N. Y.

▲ Mention Item NED-4415 when writing ▲

TEMPERATURE CONTROLS—12-page illustrated bulletin No. 700 covers self-operated temperature regulators and mixing valves to control cooling circuits on internal combustion engines, compressors and similar applications—issued by Sarco Co., 475 Fifth Ave., New York 17, N. Y.

▲ Mention Item NED-4416 when writing ▲

NONFERROUS CASTINGS—4-page illustrated bulletin outlines production facilities of three parts of company for pouring of magnesium, aluminum, bronze, brass and other nonferrous castings—issued by Howard Foundry Co., 4908 Bloomingdale Rd., Chicago, Ill.

▲ Mention Item NED-4417 when writing ▲

LIGHT WAVE MEASUREMENT—12-page illustrated booklet explains practical everyday use of light waves in shop measurements—shows mechanic how to measure in millionths of inch—issued by Acme Industrial Co., NED, 200 N. Laflin St., Chicago, Ill.

▲ Mention Item NED-4418 when writing ▲

POWER TOOLS—52-page illustrated catalog covers line of production machine tools and woodworking production tools and accessories—issued by The Delta Mfg. Co., 614 East Vienna Ave., Milwaukee, Wis.

▲ Mention Item NED-4419 when writing ▲

RIC-WIL FURNISHED MORE THAN 25,000 FT. OF PREFABRICATED INSULATED PIPE CONDUIT

For Terrace Village Housing Unit No. 2 in Pittsburgh

Fuel savings of 15% or better are made possible in this mammoth project by a central heating system. Ric-wiL pre-fabricated pipe units provide the insulation and protection for the entire underground distribution system, supplying heat and hot water for a total of 83 buildings, comprising 1851 living suites. High-pressure steam from the plant is piped through Ric-wiL steam conduit to six scattered stations where hot water is generated and circulated through Ric-wiL conduit to all the buildings.

All conduit was factory pre-fabricated and shipped pre-sealed to the site in convenient lengths. Installation was made in record time, with a minimum of excavation and backfill, saving countless man-hours and interfering little with other construction.

Ric-wiL Insulated Pipe Units are ideal for hospital, school, industrial or municipal installations of all kinds. Investigate their advantages on your next construction project.

RIC-WIL INSULATED PIPE CONDUIT SYSTEMS
THE RIC-WIL COMPANY · CLEVELAND, OHIO

▲ Mention Item NED-4420 when writing ▲

HALLOWELL
SHOP EQUIPMENT

You'll find "Hallowell" Work-Benches strong and sturdy—decidedly able to "take it." Whatever your work-bench needs, we can fill them. 1367 ready-made interchangeable combinations—varying heights, widths and lengths. Deliveries now being made quite promptly. Send for catalog.

Fig. 1117 Drawer is extra. Pat'd. & Pats. Pend.

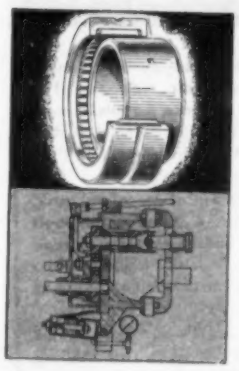
Where use of steel shop equipment is prohibited by wartime restrictions, there are "Hallowell" *Duration Type* Wood Work-Benches, like that pictured at left. *Fig. 1969. Drawer is extra.* Write for Bulletin 577 showing full line.

STANDARD PRESSED STEEL CO.
JENKINTOWN, PENNA. BOX 581
— BRANCHES —
BOSTON • DETROIT • INDIANAPOLIS • CHICAGO • ST. LOUIS • SAN FRANCISCO
Over 40 Years in Business

▲ Mention Item NED-4421 when writing ▲

NEEDLE BEARINGS
All Types—All Sizes

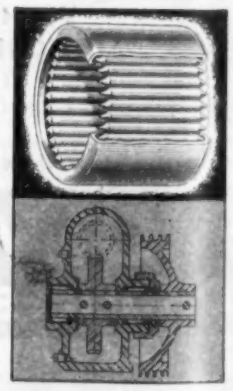
NEEDLE BEARINGS TYPE NCS



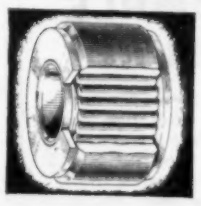
For power transmission gears and other applications where high load capacity is essential, the Type NCS Needle Bearing not only "fills the bill" but meets a wide range of requirements. With a full complement of rollers, it has many advantages—low friction coefficient, high load capacity, little maintenance and long service life—and its relatively heavy hardened outer race makes it adaptable to heavier load requirements. Write our South Bend plant for Bulletin V-104.

NEEDLE BEARINGS TYPE DC

Where light weight and high load capacity are of primary importance, in such applications as retractable landing gears, the Type DC Torrington Needle Bearing is well adapted. It is a self-contained anti-friction unit of minimum size that can be easily and quickly installed. On the gear shaft of a flap control gear box, for example, Type DC Bearings, with their small diameter, fit readily in place of ordinary bushings, offer the advantages of high capacity and low cost. Write our Torrington plant for Catalog 106.



OTHER TYPE NEEDLE BEARINGS



Users of bearings will find that they can secure the advantages of the Needle Bearing in practically any application. Torrington offers a complete line of these anti-friction bearings. For example, the Type AT Needle Bearing is designed primarily for aircraft applications. This bearing is built with heavy, through-hardened outer races designed to give the maximum capacity obtainable from the rollers used, and is provided with permanently attached inner races, so that the entire bearing forms a single compact unit. Write our Torrington plant for information on special types.

THE TORRINGTON COMPANY
Established 1866
TORRINGTON, CONN. SOUTH BEND, IND.
Makers of Needle Bearings and Needle Bearing Rollers

New York Boston Philadelphia Detroit
Cleveland Seattle Chicago San Francisco
Los Angeles Toronto London, England

TORRINGTON NEEDLE BEARING
Every feature fills a wartime need.

▲ Mention Item NED-4422 when writing ▲

Write for FREE BULLETIN on this Great Labor Saver

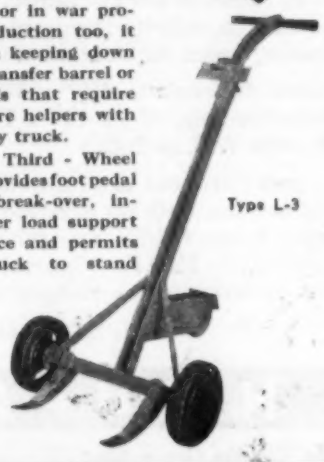
ONE MAN HANDLES UP TO 800 LB. LOADS

SABIN One-Man BARREL TRUCK

This amazing truck will be of utmost value to you in saving time and labor in war production—and in post-war production too, it will play an important role in keeping down costs. One man can load and transfer barrel or drum loads that require two or more helpers with an ordinary truck.

Exclusive Third - Wheel Feature provides foot pedal for easy break-over, insures better load support and balance and permits loaded truck to stand alone.

Picking up load automatically and smoothly.



Type L-3

The Sabin Machine Co.
6536 Carnegie Avenue
CLEVELAND, OHIO

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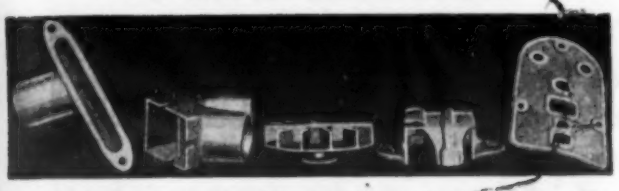

DIE CASTINGS
ZINC or ALUMINUM

We now have additional capacity in our new, modern plant available for greater production of zinc and aluminum die castings. Highest quality. Good deliveries—on schedule. Send prints or samples for quotation.

CONGRESS DIE CASTING DIV.
CONGRESS TOOL & DIE CO.
3752 East Outer Drive Detroit, Mich.

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DEEP-THROAT TYPE, 600KVA

FOR spot-welding of armor-plate assemblies for aircraft, Progressive recommends the TEMP-A-TROL* spot welder—the welder that "thinks for itself".

Today, already, TEMP-A-TROLS are welding armor-plate in production—and heat-treating the welds in the same operation.

Their phenomenal performance is due in large part to the thermocouple electrode which supplants the usual selective time-current controls with automatic temperature-controlled operation.

*Registered Trade Mark

Ask for Bulletin -301

PROGRESSIVE WELDER CO.
SEAM, PROJECTION & BUTT . . . Electric Welding Equipment . . . PORTABLE GUN & PEDESTAL
3050 E. OUTER DRIVE DETROIT, U.S.A.

▲ Mention Item NED-4425 when writing ▲

New Literature—Continued

PREFABRICATED CONSTRUCTION—8-page illustrated booklet, "An Introduction to Lindsay Structure", discusses use of sheet metal for prefabricated construction of machine housings, industrial buildings, truck bodies, ovens and similar structures—issued by Lindsay and Lindsay, 224 W. Adams St., Chicago, Ill.

▲ Mention Item NED-4426 when writing ▲

WELDING ELECTRODES—4-page illustrated folder is electrode comparison chart which details principal AWS and ASTM electrode classifications and indicates which electrodes produced by 20 leading manufacturers meet different requirements—issued by Air Reduction, 60 E. Forty-second St., New York City.

▲ Mention Item NED-4427 when writing ▲

SURFACE GRINDERS—4-page illustrated bulletin No. H-V-3 describes heavy duty precision surface grinders manufactured in both vertical and horizontal spindle design—both styles are of open side construction affording accessibility to work in process—issued by The Hill Acme Co., 6800 Breakwater Ave., Cleveland, O.

▲ Mention Item NED-4428 when writing ▲

PACKAGING—633-page illustrated 1943 Packaging Catalog reviews year and half of packaging goods for war and under wartime conditions—features many ingenious packages and substitute containers especially developed to meet wartime shortages—price is $2.50—issued by Packaging Catalog Corp., 122 E. Forty-second St., New York 17, N. Y.

▲ Mention Item NED-4429 when writing ▲

PNEUMATIC CONTROL—6-page illustrated bulletin No. 87 explains in detail operating principle of two unit New-Matic Time-Pattern controller which consists of transmitter and control instrument—issued by The Brown Instrument Co., 4529 Wayne Ave., Philadelphia, Pa.

▲ Mention Item NED-4430 when writing ▲

CARBIDE TOOLS—4-page illustrated catalog lists specifications and prices of line of finish ground, carbide tipped tools—11 x 8½-inch wall chart covering same information is also available—issued by New England Carbide Tool Co., 60 Brookline St., Cambridge, Mass.

▲ Mention Item NED-4431 when writing ▲

TOWER PACKING—15-page illustrated bulletin No. 51 describes various types of tower packings, tower sections, acid-proof masonry towers and catalytic carriers—issued by The United States Stoneware Co., 60 E. Forty-second St., New York City.

▲ Mention Item NED-4432 when writing ▲

TRUCK BATTERIES—22-page illustrated booklet, "Truck Battery Guide" provides full information on battery purchases and care to truck operators—issued by United States Rubber Co., 1207 Rockefeller Center, New York City.

▲ Mention Item NED-4433 when writing ▲

CONVEYORS—6-page illustrated bulletin, "Conveyors That Are Helping Bring Victory Faster", describes handling of shell, airplane wings, cartridges, bombs, tote boxes and many other war products—issued by Alvey Ferguson Co., 31 Disney St., Cincinnati 9, Ohio.

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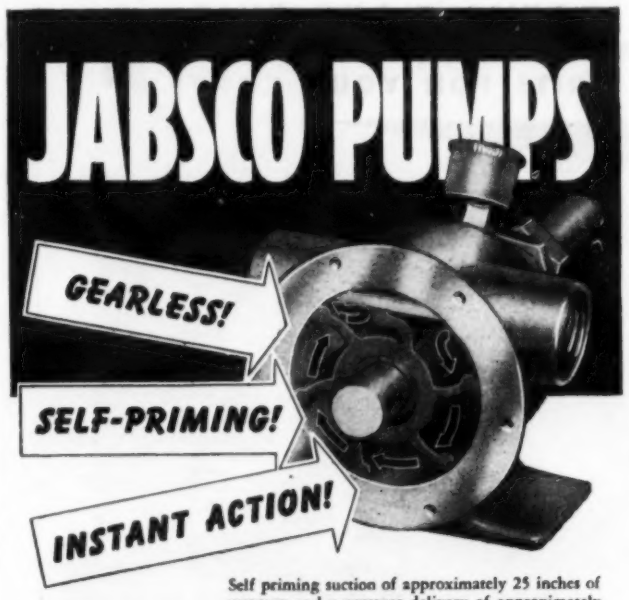
JABSCO PUMPS



Excellent for transferring liquids, pumping emulsions and all types of reactive use. The pump is made in four sizes—¼", 3/8", ½", and ¾" for free delivery of 2.5 to 22 g.p.m. Write for complete information.

Self priming suction of approximately 25 inches of mercury and a pressure delivery of approximately 23 pounds is obtained by the flexing action of the arms of the Neoprene impeller against a flat offset plate in the pump housing. This plate causes the impeller arms to bend—bending action sets up suction in the port to the right and draws fluid into the pump. It simultaneously establishes pressure for positive delivery outward through the port to the left.

MODEL "D" —¾" PUMP—

JABSCO PUMP COMPANY
8302 Wilshire Blvd., Beverly Hills, California

THE PUMP WITH THE FLEXIBLE IMPELLER

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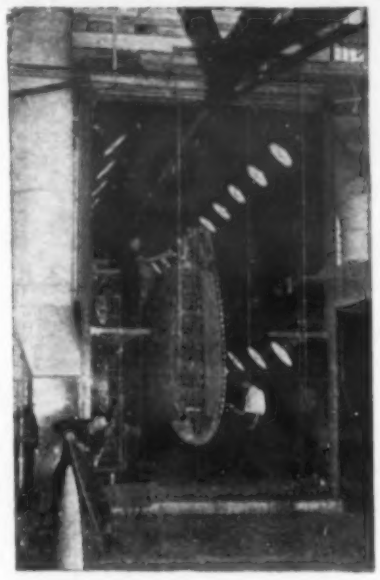

Another Production Bottleneck Broken By KOCH!

The wings of one of the Navy's largest flying boats are finished in one, quick operation in this huge KOCH Spray Booth. This down-draft, water-wash unit holds an entire wing section. Fresh conditioned air enters through top gratings. Overspray and fumes are drawn through floor-gratings, washed of inflammables, and expelled. The results are greater safety and health-protection . . . faster, steadier production of finished wings.

Koch's Engineering Staff Is At Your Service

KOCH Engineers get a kick out of tackling tough equipment problems. KOCH Spray Booths, force-drying systems and all types of baking ovens are speeding up production in some of Uncle Sam's most vital war plants. If you've got a tough problem . . . and want quick action . . .

GEORGE KOCH SONS, INC. MAKERS OF Industrial Equipment

PHONE, WIRE OR WRITE TODAY!

2124 Penna. St. Evansville 4, Indiana

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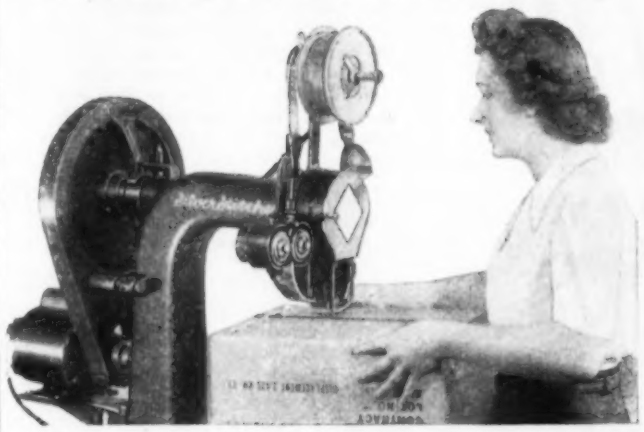
TO WAR PRODUCT MANUFACTURERS WHO WANT FASTER LOWER-COST CARTON STITCHING



In hundreds of war plants, these new, low-cost Acme Silverstitchers are smashing box stitching records. Box stitching is easier, faster for women and men operators alike.

PRODUCTION DOUBLED! Many users have had their output of stitched cartons doubled. And they've a better and neater job—a much stronger carton.

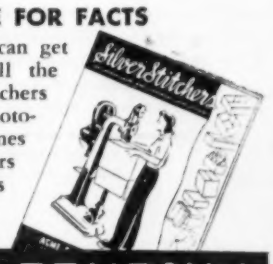
SAVINGS OF 50% In time and material, these long-lasting stitching machines are making savings of as much as 50%. And sealing by stitching is often five times as fast as other sealing methods. Actual tests show holding power to be twice as strong on the average.

STANDARD AND SPECIAL TYPES. There is an Acme Silverstitcher to meet every box stitching requirement—Straight Arm, Bottom, Top, Seam, Combination Straight Arm and Bottom, Combination Top and Bottom—as well as special types. Sturdily built for long, trouble-free service. Few moving parts mean low maintenance costs. Mechanism is guarded for maximum safety. Cost is amazingly low.

AND USE ACME SILVERSTITCH for trouble-free stitching. It's true to size and temper . . . rust-resisting . . . non-tangling . . . providing stitches which clinch tightly and stay tight for the life of the package. Made in six standard sizes . . . in five and ten-pound, one-piece coils.

BE SURE TO WRITE FOR FACTS

A new folder tells you how you can get faster, better stitching. It has all the data on the new Acme Silverstitchers—complete with interesting photographs . . . showing these machines in use, helping other manufacturers meet war requirements. It's yours for the asking. Write us.



ACME STEEL COMPANY
2822 Archer Avenue, Chicago, Illinois
Branches and Sales Offices in Principal Cities

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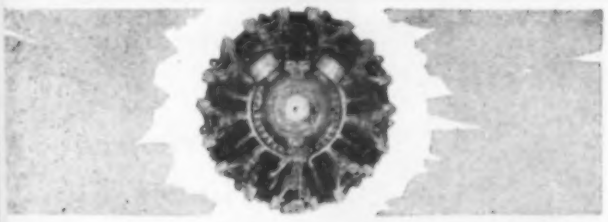

PRATT & WHITNEY AIRCRAFT

GETS SPLIT-SECOND PROTECTION

WITH AMPLICALL

In Pratt & Whitney's great warplane engine plant at East Hartford, Conn., are installed 50 separate *AMPLICALL* Sound Amplifying Systems. This network does a complete job of providing split-second air raid, fire and other alarm protection for both employees and property. Large and small plants from coast to coast have found in *AMPLICALL* Intercommunication and Paging the complete answer to increased protection. Let us show you how.

At left: Control unit of the Rauland AMPLICALL Sound System

Electroneering is our business

Rauland

Buy War Bonds and Stamps

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The Rauland Corporation . . . Chicago, Illinois

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Registered U. S. Patent Office

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NEW PRODUCTS AND MATERIALS

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August, 1943

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". . . built to last a lifetime!"

MODEL ILLUSTRATED
$41.25
COMPLETE

Three heat ranges. High, 900 F. Medium, 400-900 F. Low, 0-400 F. Large, accurate Pyrometer aids in definite temperature control and in securing exact duplication of results.

Interior dimensions, 4½" x 3⅝" x 4½". Overall dimensions, 11" x 13" x 11". Operates on 110 volts, A.C. or D.C.

Huppert Furnaces are ruggedly built for heavy duty service, with no exposed contacts. Prices range from $24.75 up, with standard heat ranges up to 2500 F. (Special voltages, dimensions or temperature ranges to order.)

Write for Catalog

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6838 So. Cottage Grove Ave. Chicago, Ill.

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BUSCHMAN PORTABLE CONVEYOR

Don't carry packages. Do away with time-wasting handling and rehandling. Transport packages with Buschman Conveyors. Set them up where you need them. Easy to carry. No tools required for coupling sections together or adjusting height.

Streamlined, sturdy, rugged in construction. Engineered by conveyor specialists to stand the gaff of continuous service. Transports, by gravity, cartons, boxes, crates and other packages to or from production lines, storerooms, trucks, boxcars, or loading platforms.

In 10-ft. straight and curved sections. Quickly, easily changed from one location or application to another. Industry's First-Aid for women workers. Low in cost.

In stock for immediate delivery

Write for Bulletin 8 showing applications.

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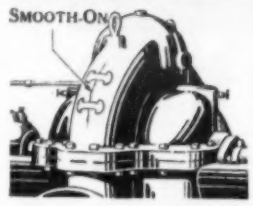
How SMOOTH-ON will help maintain production schedules



Buy Smooth-On in 7-oz., 1-lb., 5-lb. or larger containers from your supply house or if necessary, from us. For your protection, insist on Smooth-On . . . used by engineers since 1895.

Every repair on a cracked casting or a leaking seam means loss of time which, today, may be even more important than the money cost of the repair.

To cut down repair time on many trouble jobs that would cause interruptions to production . . . use SMOOTH-ON No. 1, for SMOOTH-ON repairs do not require dismantling of apparatus or the use of heat.

SMOOTH-ON is the speediest way of repairing cracks, leaks and loose parts in many cases, and the results are lasting.

SMOOTH-ON CEMENTS
for the Motor Car and Boat, Home, Factory and Power Plant

FREE 40-Page Handbook

170 Diagrams and concise simple instructions for ingenious practical repairs to plant equipment and structures. Sent FREE on request.

Smooth-On Mfg. Co., Dept. 10
570 Communipaw Ave. Jersey City 4, N. J.

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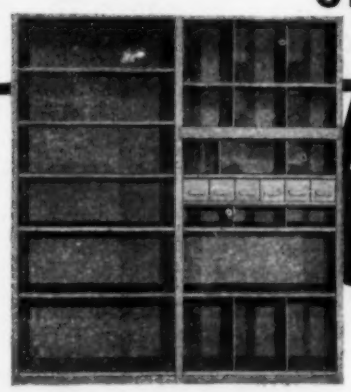
LYON *Adjustable* SHELVING



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2208 Madison Avenue, Aurora, Illinois
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Address _____
City _____ State _____

LYON METAL PRODUCTS, INCORPORATED AURORA ILLINOIS
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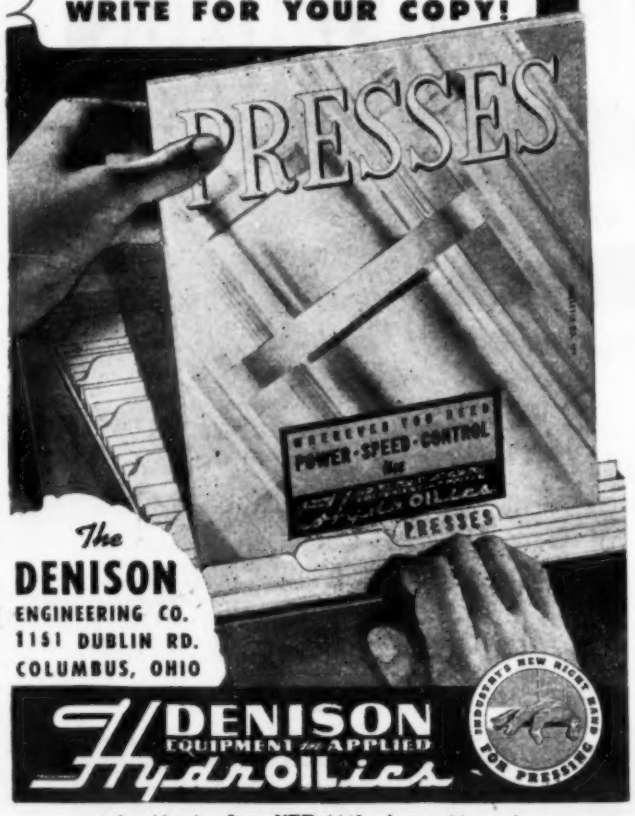
YOU'LL WANT THIS HYDRAULIC PRESS DATA-WRITE FOR YOUR COPY!



The **DENISON** ENGINEERING CO. 1151 DUBLIN RD. COLUMBUS, OHIO

DENISON EQUIPMENT for APPLIED *HydrOILics*

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PSC CARS HELP KEEP PRODUCTION ON SCHEDULE

Throughout your plant PSC Cars help you meet *your* wartime production quotas — keep material rolling! Sturdy, dependable, easy-operating, these cars "stay on the job" day in and day out.

Get the facts on PSC Cars in Bulletin No. 71. Write for your copy today.

"DESIGNERS AND BUILDERS OF RAILWAY CARS SINCE 1898".

PRESSED STEEL CAR COMPANY, INC.
INDUSTRIAL DIVISION · PITTSBURGH, PA.

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IMMEDIATE SHIPMENT!

STEEL BOXES

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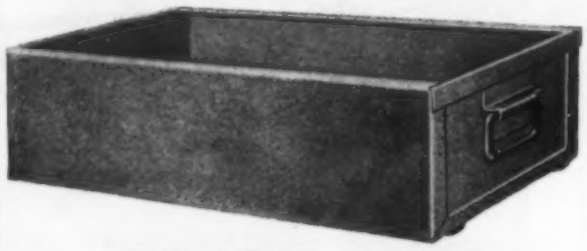

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Welded Stainless Tubing
Fabricating Problems

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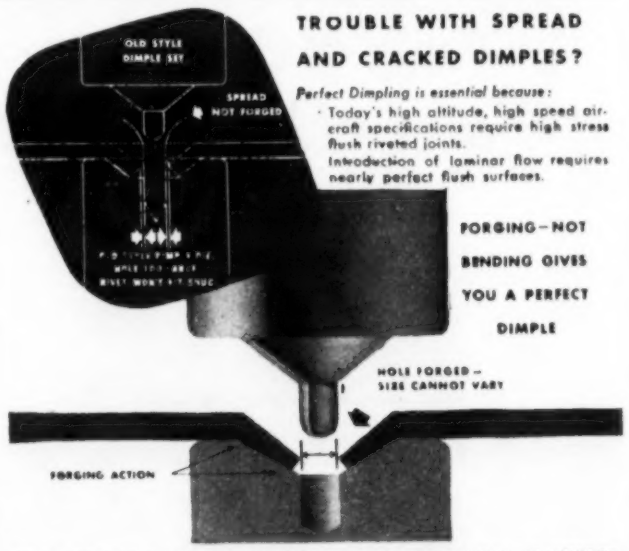

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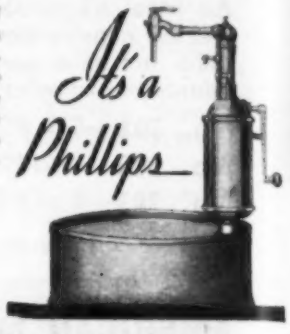

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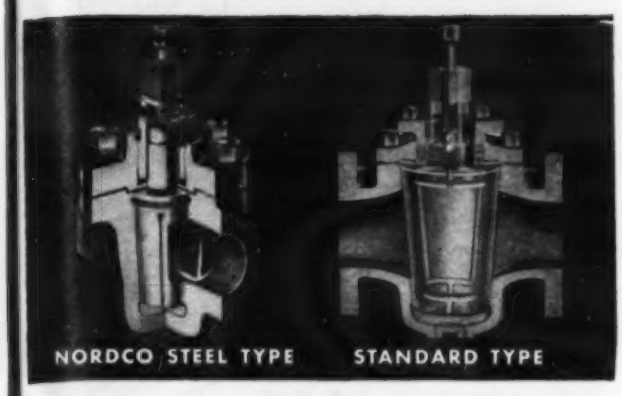

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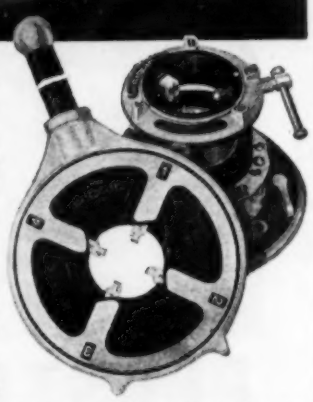

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Pipe Wrenches, Cutters, Threaders, Vises

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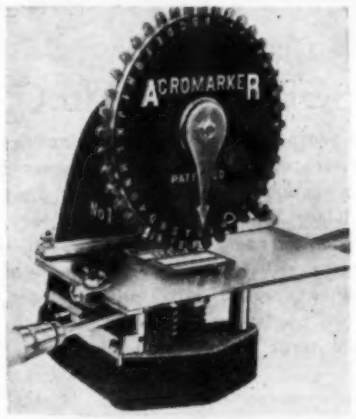

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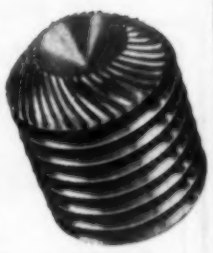

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